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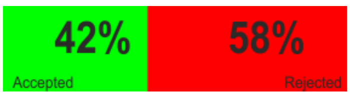

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DETERMINATION OF THE REYNOLDS NUMBER AND INTENSITY OF VORTEX FORMATION WHEN EXPANSION AND CONSTRICTION OF FLUID FLOW

Abstract*: The intensity fields of vortex formation and the range of the Reynolds numbers were calculated by the computer simulation during water movement at different velocities in the diffuser/confuser and at certain distances before and after the hydraulic resistance in the pipeline. It is determined that transition of the laminar regime to the turbulent regime of water movement in the pipeline after the confuser and the diffuser occurs at velocity of 2 and 3 m/s, respectively. Intensity of vortex formation does not change with increasing flow velocity of fluid in the confuser. Flow expansion leads to an increase in intensity of vortex formation with increasing flow velocity of fluid.*

Key words*: the diffuser, the confuser, vortex formation, the Reynolds number, water, flow velocity.*
Language*: English*

Citation: Chemezov, D., et al. (2021). Determination of the Reynolds number and intensity of vortex formation when expansion and constriction of fluid flow. *ISJ Theoretical & Applied Science, 01 (93),* 101-104.
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Introduction

Movement of working fluid in the general purpose pipelines is carried out at velocity of up to 4 m/s. Higher fluid flow velocities cause vibrations in the pipeline. The hydraulic resistances (the diffusers and the confusers) are placed in the pipeline to reduce or increase flow velocity of fluid [1-4]. The flow characteristics of some fluids in the pipelines with the local hydraulic resistances were investigated in the number of the scientific works. In the works [5-9], initial and calculated flow velocities of water and industrial oil in the pipeline with sudden and smooth expansions and constrictions were compared. It is determined that pressure drop before the profile inlet part of the confuser and after the conical outlet part of the diffuser will depend proportionally on non-uniformity of velocities of upper and lower fluid flows. These results were obtained in the conditions of fluids flow with single initial velocity. Description of fluid flow with combination of the hydraulic resistances is given in the work [10].

Water has low viscosity. Vortices are formed that cause vibrations in the pipelines with the hydraulic resistances during water movement. Occurrence of vibrations of the pipeline is successfully predicted by mathematical modeling when changing flow velocity of fluid.

Materials and methods

The purpose of the study was to determine effect of fluid flow velocity in the pipeline with the diffuser and the confuser on intensity of vortex formation and the value of the Reynolds number for predicting the fluid flow regime. Fragments of the two-dimensional models of the pipeline with the diffuser and the confuser were built for modeling. The angle of the expanding and constricting parts of the pipeline was adopted 18 degrees. Water at the temperature of 293.15 K was taken as fluid moving through the pipeline. Initial velocity of water flow in the pipelines models with the diffuser and the confuser was 0.5, 1, 2 and 3 m/s. The boundary condition for walls of all pipelines models is no slip.

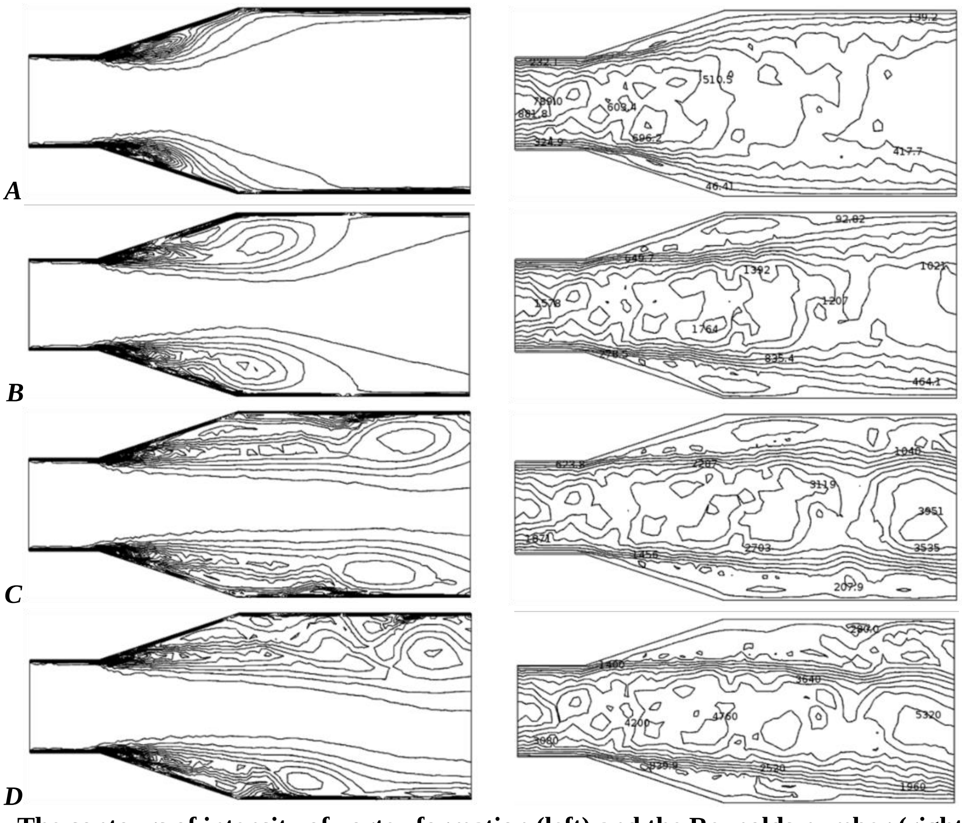

Figure 1 – The contours of intensity of vortex formation (left) and the Reynolds number (right) of water flow in the pipeline with the diffuser: *A* – initial flow velocity of 0.5 m/s; *B* – initial flow velocity of 1 m/s; *C* – initial flow velocity of 2 m/s; *D* – initial flow velocity of 3 m/s.

Results and discussion

The contours describing distribution of vortex formation in flow of moving water and the numerical values of the Reynolds number were formed on the two-dimensional models of the pipelines with the diffuser and the confuser after the calculation. The contours of intensity of vortex formation and the Reynolds number of water flow in the pipeline with the diffuser and the confuser are presented in the Figs. 1 and 2.

Movement of fluid at velocity of 0.5-2 m/s through the diffuser does not change the flow core direction. Changing direction of the flow core (asymmetric vortex formation) is observed at initial water flow velocity of more than 3 m/s. Formation of vortex flows occurs in the expanding part of the pipeline. Intensity and distribution of vortex flows increase with increasing fluid flow velocity. Vortex flows are saved at certain distance after the hydraulic resistance at water flow velocity of more than 2 m/s. The calculated values of the Reynolds number indicate the flow regime of fluid in the pipeline with the diffuser:

- laminar (the Reynolds number from 46.41 to 1764) at water flow velocity of up to 1 m/s;
- transient (the Reynolds number from 207.9 to 3951) at water flow velocity of 2 m/s;
- turbulent (the Reynolds number from 280 to 5320) at water flow velocity of 3 m/s or more.

Vortex formation in the pipeline with the confuser occurs near walls. Increasing velocity of water flow does not lead to distribution of vortices in the cross section of flow. The flow regimes were determined taking into account increasing flow velocity of fluid in the confuser and the calculated values of the Reynolds number:

- laminar (the Reynolds number from 73.99 to 1406) at water flow velocity of 0.5 m/s;
- transient (the Reynolds number from 147.9 to 2810) at water flow velocity of 1 m/s;
- turbulent (the Reynolds number from 295.4 to 8413) at water flow velocity of 2 m/s or more.

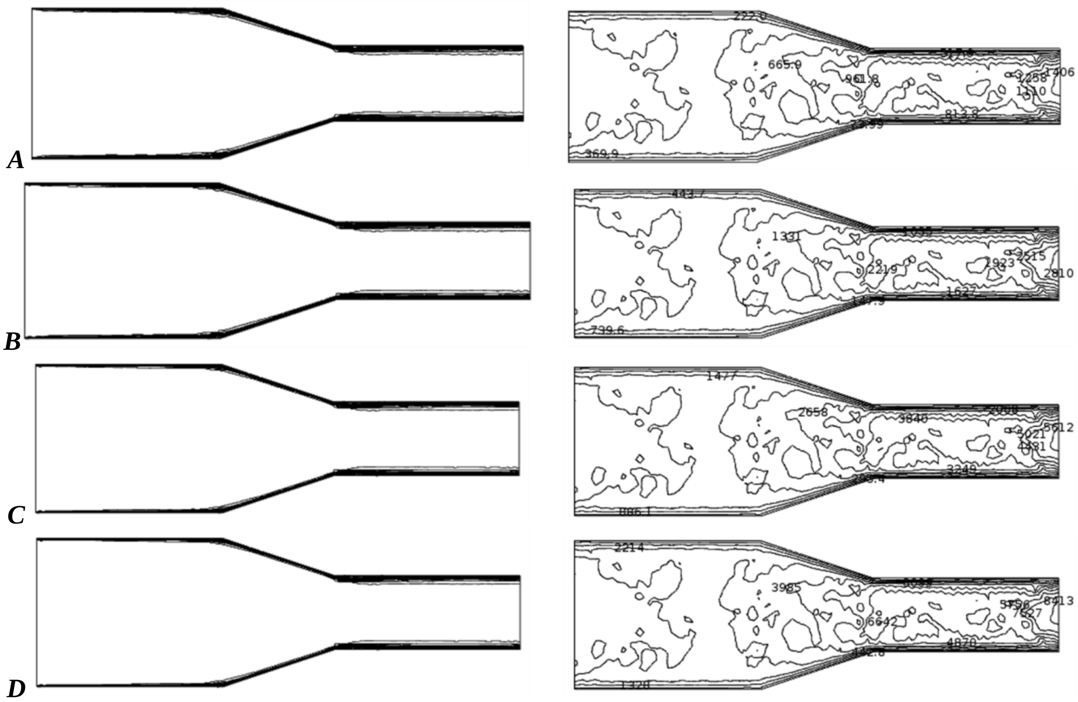

Figure 2 – The contours of intensity of vortex formation (left) and the Reynolds number (right) of water flow in the pipeline with the confuser: *A* – initial flow velocity of 0.5 m/s; *B* – initial flow velocity of 1 m/s; *C* – initial flow velocity of 2 m/s; *D* – initial flow velocity of 3 m/s.

Conclusion

Thus, based on the performed analysis of the study results, the following conclusions were made:

1. Vortex formation in the pipeline with the confuser is concentrated on walls and does not pass into the flow core of moving fluid at different velocity. Vortices are formed at the inlet to the hydraulic resistance and act at certain distance after the resistance with increasing flow velocity of fluid in the pipeline with the diffuser.

2. Vortices are formed asymmetrically and lead to a change in direction of the flow core at fluid flow velocity of 3 m/s in the pipeline with the diffuser. Thus, vibrations occur in the pipeline at given water flow velocity.

3. The laminar regime is observed at fluid flow velocity of up to 2 m/s in the pipeline with the diffuser. Same distribution of the Reynolds number contours in the pipeline with the confuser indicates the stable turbulent regime determined at water flow velocity of more than 2 m/s.

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MODERN URBAN AGGLOMERATION AND PROBLEMS OF URBAN DEVELOPMENT IN NUKUS (1980-2005)

***Abstract**: The article studies the processes of formation of urban agglomeration of Nukus, capital of Karakalpakstan, in the years 1980-2005 1991-2005 become a new stage in the development of Nukus, capital of Karakalpakstan. This was due not only to the industrial development of the region and its strategic role in the economy of Uzbekistan, but also to other factors (environmental problems, demographic processes, socio-economic situation, etc.).*

The processes of urbanization in the cities of the Republic of Karakalpakstan in the twentieth century are studied. The main causes of urbanization were identified, and the process of urbanization was divided into three periods: the study of culture and economy in large centers, the spread of urban culture among the urban population, and the leveling of villages and cities to the level of central cities.

***Key words**: City, agglomeration, urbanization, problem, urban development, industry, Tuyamuyun, Nukus, Takhtakupyr, Aral sea region, Katex, culture, self-government, makan-Kenesov, social, economy, independence, Aral, water transformation.*

***Language**: Russian*

***Citation**: Esnazarova, Z. B. (2021). Modern urban agglomeration and problems of urban development in Nukus (1980-2005). *ISJ Theoretical & Applied Science, 01 (93),* 105-111.

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СОВРЕМЕННАЯ ГОРОДСКАЯ АГЛОМЕРАЦИЯ И ПРОБЛЕМЫ ГРАДОСТРОИТЕЛЬСТВА НУКУСА (1980-2005 гг)

***Аннотация**: В статье изучаются процессы формирования городской агломерации Нукуса, столицы Республики Каракалпакстан, в 1980-2005 гг. 1991–2005 годы стали новым этапом в развитии Нукуса, столицы Республики Каракалпакстан. Это было связано не только с промышленным развитием региона и его стратегической ролью в системе экономики Узбекистана, но и с другими факторами (экологическими проблемами, демографическими процессами, социально-экономической ситуацией и т..)*

Изучены процессы урбанизации в городах Республики Каракалпакстан в XX веке. Выявлены основные причины урбанизации, и процесс урбанизации был разделен на три периода: изучение культуры и экономики в крупных центрах, распространение городской культуры среди городского населения и выравнивание деревень и городов до уровня центральных городов.

***Ключевые слова**: город, агломерация, урбанизация, проблема, градостроительства, индустрия, Туямуюн, Нукус, Тахтакупыр, Приаралья, Катекс, культура, самоуправления, макан-кенесов, социаль,экономика, независимости, Арал, водопреобразований.*

Введение

На современном этапе в мире заметно движение от традиционной машинной индустрии к информационному сообществу. Все более широко применяются новейшие достижения информатики и вычислительной техники во всех отраслях производства, социальной жизни и быта. Наиболее быстро расширяется третичная область хозяйственной деятельности - сфера услуг, в которой трудится 50-70% населения, занятого в национальном хозяйстве. Существенно возрастает роль ученых и профессиональных специалистов в общественном прогрессе. Все это знаменует переход к высоким технологиям.

Общеизвестно, что наибольшего процветания добиваются те, кто быстрее осваивает перспективные достижения современного этапа научно-технического прогресса. С учетом этих обстоятельств нами видится важным рассмотрение вопроса формирования современной городской агломерации и перспектив градостроительства на примере города Нукуса.

Город Нукус растет быстро, и это происходит почти каждый день. Обращаясь к истории Каракалпакстана, можно констатировать, что более интенсивный процесс образования поселков и городов отмечался в первой половине 1980-х годов. Подавляющее большинство новых городских образований выполняли функции районного центра Каракалпакстана. Образование новых городов и поселков зачастую без надлежащей социально-экономической основы (вроде поселков городского типа Каракалпакия, Жаслык) несколько усложнило проблему развития малых городов.

В конце 1980-х годов, после небольшого перерыва интенсивного грядообразования (1986-1988 гг.), вновь отмечалось юридическое оформление большого числа населенных пунктов в ранге городских поселений. Таким образом, в начале 1990-х годов по Узбекистану было 123 города и 104 поселка городского типа. Несмотря на некоторое замедление формирования городов, в 2000 году в Узбекистане насчитывалось 120 городов и 113 поселков городского типа.

Таким образом, после обретения независимости образование или, вернее, юридическое оформление городов явно замедлилось. Это и правильно, ибо города, как места сосредоточения социально-экономического, научно-технического потенциала и инфраструктуры тоже переживают своего рода переходный период. С другой стороны, крупные рыночные преобразования, изменения в общественной и политической жизни республики, укрепление ее национальной экономики, развитие глубинных сельских территорий, возможно, прежде всего, с помощью городов и через организующие и обслуживающие центры на местах [1].

Временные трудности переходного периода находят свое отражение и в состоянии городов Республики Каракалпакстан: некоторые города растут медленно в результате миграционного оттока некоренного населения (например, г. Тахиаташ), а в других просто отсутствует современная градообразующая база. Естественно, эти и другие проблемы постепенно будут решаться по мере углубления рыночных реформ, социально-экономического развития Республики Узбекистан. В городах будут развиваться рыночная инфраструктура и социальная сфера.

В условиях города Нукуса по-прежнему актуальными остаются вопросы, поднятые еще руководителями Каракалпакстана 1950-х годов - Н.Джапаковым и О.Махмудовым. В письме руководителям Узбекистана Н.Мухитдинову и А.Ниязову от 29 июля 1952 года “К вопросу о размещении производительных сил Каракалпакской АССР в зоне влияния Главного туркменского канала” они указали на необходимость решения, помимо многих, и следующих аспектов социально-экономической политики:

Во многом указанные объекты промышленности практически осуществились лишь через 40 с лишним лет: в годы независимости были сданы в эксплуатацию завод по производству кабеля, комплекс «Катекс», водовод "Туямуюн-Нукус-Тахтакупыр" и мн. др. Налажена добыча мрамора, начато производство медицинского бинта и спирта. Обеспеченность населения чистой питьевой водой повысилась с 40% до 59%, природным газом - до 83%. Строительство железнодорожной магистрали «Навои-Учкудук-Нукус» расширило возможности выхода в соседние государства, что имеет важное стратегическое значение в условиях нашего региона. Все предприятия строительного направления работают на строительстве Кунградского содового завода.

Тем не менее, в 1997 году Президент Республики Узбекистан И.А.Каримов отметил, что если учесть имеющиеся возможности, интеллектуальные, научно-технические и другие факторы, то станет очевидно, что осуществляемая работа явно недостаточна. Сложившаяся обстановка заставляет всех нас глубоко и серьезно задуматься. Почему правительственные постановления по социально-экономическому развитию Республики Каракалпакстан, улучшению условий жизни народа не дают свои результаты, почему не улучшается благосостояние народа? И каким образом эти задачи осуществимы в условиях городов и городских агломераций?

Общеизвестно, что основным движителем формирования городской агломерации должны стать экономические факторы. Давно изменилась форма собственности и появились настоящие хозяева собственности. В Каракалпакстане и в столице в целом это пока не дает должных результатов из-за того, что имеет характер показной мишуры. Столичные предприятия изменили только названия, а методы и стиль их работы остаются прежними. В Каракалпакстане и в столице вместо того, чтобы искать пути решения таких вопросов, как снижение эмиссии, объемов дебиторских и кредиторских задолженностей, сокращение долгов, невыплаченных в бюджет в срок, обеспечение поступления наличности, продолжают порочную практику оправдания, что «из центра не выделяются дополнительные денежные средства», либо винить природную стихию. Президент И.А.Каримов указывал, что «это метод слабых людей, некомпетентных в своей работе, с низким уровнем организационных способностей» [2].

Статус и значение столицы Республики Каракалпакстан — в политической, социально-экономической и духовной жизни Приаралья очевидны для всех. Говоря об экономическом потенциале Нукуса, не будет преувеличением сказать, что его промышленность — одна из главных опор в развитии Республики Каракалпакстан. В промышленности города ведущее место занимают отрасли и предприятия, оснащенные современной технологией, связанные с аграрной сферой. Ряд крупных предприятий, таких, как «Нукус кабель», мраморный завод, «Катекс» пополняются новыми производственными мощностями, оборудованными передовыми технологиями. В настоящее время более 20 зарубежных компаний и фирм установили прочное деловое сотрудничество с Нукусом.

Успехи в сфере строительства предприятий, выпускающих современные строительные и отделочные материалы, являются опорой в нашей созидательной работе, в изменении облика столицы.

Однако у столицы есть свои актуальные проблемы. Говоря о старой части города, встают такие важные задачи, как облегчение жизни населения, проживающего на этой территории, благоустройство этих мест, создание достойных условий для жизни людей: была проложена троллейбусная линия, улучшилось транспортное обслуживание, строится академический лицей и ряд других объектов культуры и быта. Это стало первым этапом благоустроительных работ, запланированных в старой части города. Но есть еще очень много проблем. Все еще не решена проблема строительства коммуникационной сети, новых детских садов, школ, больниц и других культурно-бытовых объектов. Например, старая часть города имеет свою историческую ценность, которая должна украшать столицу, ибо он — символ Нукуса. Каждое название местностей старого города — это отрывок из нашей истории. Восстановление множества исторических названий внесет свой вклад в осознание самих себя как нации и народа.

Рассуждая о будущем Нукуса, особое значение, наряду с ростом предприятий, которые обеспечат работой население, приобретает развитие сферы обслуживания и сервиса. В развитых государствах 60-70% населения трудится именно в этой области. В столице этот показатель пока что составляет 10-15%. Опыт развитых стран показывает, что необходимо строительство современного предприятия по переработке бытовых отходов, которая до сих пор находится в неудовлетворительном состоянии.

Новые формы управления городов предопределили формирование столицы как сети органов местного самоуправления. За последние годы сделано немало для укрепления авторитета 43 макан-кенесов столицы, расширения полномочий махаллинских аксакалов и актива, повышения их ответственности. Поднятие статуса макан-кенесов – не только социально-экономическая, но и огромная воспитательная и духовная задача.

Развитие производительных сил и социально-культурной среды общества теснейшим образом связано с повышением уровня образования всего населения, овладением современными достижениями науки и техники. Однако необходимое внимание к ним требует крупных финансовых затрат и, конечно же, предполагает наличие педагогических и научно-технических кадров. Несмотря на наличие вузов, Республика Каракалпакстан не может должным образом решать эти вопросы.

За годы независимости (1991-2005 гг.) создан, по существу, новый механизм социальной защиты населения с учетом реальной экономической ситуации, имеющихся ресурсов и возможностей. Различным этапам реформирования соответствовала и своя концепция социальной политики. В начальный период перехода к рынку государство шло по пути упреждающей социальной защиты всего населения. В первые годы реформы в качестве защитной меры широко использовалась система потребительских субсидий и различные формы защиты потребительских рынков против утечки основных продовольственных товаров за пределы страны. Это был вынужденный шаг.

По мере углубления реформ, развития рыночных отношений были внесены существенные коррективы в приоритеты проводимой социальной политики - сделан упор на оказание помощи действительно нуждающимся семьям. Проведена большая работа по разработке и реализации механизма адресной социальной защиты населения. Можно смело сказать, что самые трудные испытания, выпавшие на долю нашего народа и которые неизбежны в переходный период, уже позади.

Останавливаясь на экономике Каракалпакстана, перспективах ее развития, 2 декабря 1999 г. Президент РУз И.А.Каримов обратил особое внимание на три проблемы, которые ждут своего решения и окажут влияние на социальную политику:

* пересмотр структуры экономики с учетом темпов прироста населения; развитие рыночной инфраструктуры в сельском хозяйстве;
* развитие фермерских и дехканских хозяйств, малого и среднего бизнеса в сельском хозяйстве;
* разработка новой системы мер по своевременной оплате труда[3].

За годы независимости в Нукусе достигнут ряд положительных результатов в улучшении жизненных условий населения, осуществлении коренных экономических реформ. В народном хозяйстве растет доля негосударственного сектора, составляющая 80-90%. В свое время Президент РУз подчеркнул еще одно своеобразное и особенное качество города Нукуса. Ныне 65% населения города составляет молодежь до 25 лет. Здесь каждый десятый гражданин является студентом, что свидетельствует о перспективах, об огромных возможностях молодого города.

Судьба народов Приаралья - узбеков, каракалпаков, казахов и туркмен, их история, традиции землепользования тесным образом связаны с Аральским морем. Проблема Аральского моря уникальная, не имеющая аналогов, печальный опыт антропогенного преобразования природы. История не знала примеров, когда на глазах одного поколения людей с лица Земли исчезает море с акваторией более 6 млн. га и глубиной до 69 метров, а на его месте формируется коварная, песчано-солончаковая пустыня [4]. Приаралье находится под тройным ударом: аридизация климата, засоление земель, ухудшение качества питьевой и оросительной воды.

Чрезмерно интенсивное земледелие, усыхание Аральского моря, усиление процесса опустынивания Средней Азии является самым крупным просчетом среди глобальных “водопреобразований” природы. Ученые многих стран предлагают много выходов из создавшегося критического положения [5]. Развитие однобокой структуры сельского хозяйства обусловило рост миграции и расширения городских образований, в том числе и Нукуса.

Урбанизирующее влияние Нукуса на территории Приаралья проявляется, прежде всего, в формировании на его базе агломераций населенных мест. В Узбекистане таковыми являются Ташкентская, Фергано-Маргиланская и Самаркандская области. При этом указанные агломерации по форме считаются городскими, а по существу — сельско-городскими, основу которых составляют агропромышленные комплексы и узлы. Велика в них доля сельского населения, занятого в сфере аграрного сектора национальной экономики.

Агломерация в Приаралье географически приурочена, в основном, к оазисам поливного земледелия и столичному региону расселения. В оазисах имеются естественные предпосылки для формирования более сложных и интегрированных систем расселения.

Переход к рыночным отношениям, многоукладная экономика, строительство совместных предприятий с инофирмами и возникновение на этой основе полюсов и центров отождествляет стратегию развития урбанизации в Узбекистане. Поэтому необходимо пересмотреть стратегию развития Нукуса с позиции современного подхода к аулам и кишлакам и ускорения их социального развития на основе взаимовыгодного союза города и аула. Более того, современная ситуация далека от идеальной: аул и кишлак отталкивают рабочую силу, а Нукус пока не подготовлен к их приему.

Несколько десятилетий для истории - срок небольшой. А как даже за это время изменилась столица Каракалпакстана: природный газ, холодная и горячая вода, кабельное телевидение — без чего сегодня невозможно представить современный город.

Можно говорить достаточно определенно о путях дальнейшего развития столицы исходя из перспективных планов, возможностей социально-экономического развития Каракалпакстана.

В столице согласно четвертому генеральному плану, разработанному в 1982 г. «УзНИИПградостроительство», полным ходом идут строительство и благоустройство, столица разделена на несколько кварталов, зон жилых домов, центры культуры и крупных промышленных зон:

В состав столицы Республики Каракалпакстан также входят и поселки Каратау (на северо-восточной окраине города) и Пристань (на юго-западе).

В общей сложности в городе Нукусе имеются 602 улицы, 8 микрорайонов с многоэтажными домами и объектами социальных услуг. Под жилищными объектами занято 1 551 905 кв. м площади. Из общего объема земельной площади под одноэтажными домами занято 2 217895 кв. м, двух и более этажными домами – 187291 кв. м. В Нукусе имеются 25 513 частных домов и 14 679 квартир [6] .

В 2005 году в г. Нукусе насчитывалось 602 улицы, 8 жилых микрорайонов с объектами социальных услуг. В общем, на сегодняшний день город Нукус представляет собой крупный центр на северо-западе Узбекистана с общей площадью 212 кв. км с населением 261,7 тысячи человек. В национальном отношении каракалпаки составляют 122,4 тысячи человек (46,8%), узбеки

– 32,4 тысячи (12,4%), казахи – 57,8 тысячи (22,1%), русские 17,5 тысячи (6,7%), другие – 31,4 тысячи человек.

Исходя из вышесказанного, намного определеннее выглядит перспектива градостроительства и факторы грядообразования в Каракалпакстане. Например, развитию городской инфраструктуры служат предприятия строительной индустрии, которых в городе насчитывается 10, из них 2 акционерные общества, 8 – общественно-арендные предприятия. Помимо них действует одно специализированное строительное предприятие. К концу 2006 года на каждого жителя города Нукуса приходилось 13,9 кв. м жилья. Только в 2006 году в эксплуатацию было сдано 63,3 тысяч кв. м жилья.

При этом отметим, что в 1960-1980-е годы в городе Нукусе размещение жилых комплексов и производственных предприятий, соотношение инфраструктуры сервисной службы быта и услуг, транспортных коммуникаций осуществлялось неравномерно. Как видно из табл. 10, во всех районах города присутствуют индивидуальные жилые дома, особенно в центре, что создает определенную дисгармонию в облике города. Во многом эти дома планировались в далеких 1960-х годах, что указывает на не учет общемировой практики развития городской агломерации, не были учтены и местные особенности жилья [7].

Перейдем на количественные изменения в градостроительстве. В домах (микрорайоны № 21, «Черемушки»), возведенных еще в 1950-1960-е годы, вне зависимости от их этажности, большинство составляют двух- и однокомнатные квартиры [8]. Семье из четырех человек предоставлялась двухкомнатная квартира, но сегодня такая же семья въезжает в квартиру, состоящую из трех комнат. В недалеком будущем число таких квартир значительно увеличится.

В дальнейшем планируется для семьи из трех человек — трехкомнатная, из четырех — четырехкомнатная квартира, то есть заселение из расчета комнат на человека. На перспективу же предусматривается, помимо комнаты для каждого члена семьи, еще одна большая по площади комната, предназначенная для отдыха, встречи с друзьями, проведения семейных торжеств. С годами требования одной и той же семьи к квартире могут меняться.

Возможность перепланировки квартиры в соответствии с потребностями живущих — одно из условий, которому должно отвечать жилище в будущем. Это будет достигаться применением перегородок, изготовленных из легких, звуконепроницаемых материалов, а также перегородок-шкафов, без каких-либо трудностей устанавливаемых в любом месте. Широкое распространение должны получить раздвигающиеся перегородки наподобие гармошки, такие, как в Ташкенте. С помощью такой перегородки общую комнату вместе с прилегающими помещениями можно преобразовать в единое пространство площадью 30-40 м^2 [9].

Многое, о чем здесь говорится, уже сейчас предусматривается проектом строительства образцово-перспективного жилого района Нукуса, т.н. «26-й» микрорайон. Здесь были проверены новые типы жилых домов, приемы застройки, организация обслуживания проживающих, методы строительства. Само название «образцово-перспективный» говорит о цели данного строительства.

Массовая застройка жилых районов, кварталов в городе Нукусе обусловила, помимо решения множества технических задач (связанных с изготовлением различных изделий, их прочностью, транспортировкой, монтажом зданий), необходимость поиска новых архитектурных решений. Основой нынешних индивидуальных жилых домов является фасад каждого дома. Общее объемно-пространственное решение всего комплекса в целом, базирующееся на единстве целесообразности и красоты, остается вне поля зрения строителей индивидуального дома.

Целесообразность — это рациональное размещение самих домов с учетом требований ориентации помещений по странам света и местных природных условий. Улучшить микроклимат дают возможность и зеленые насаждения, водоемы, даже такие небольшие, как плескательные бассейны.

Местный ландшафт в условиях массового жилищного строительства - очень важный фактор, влияющий как на архитектурно-планировочные решения, так и на выразительность жилища. Об этом приходится упоминать, поскольку в прошлом нередки были случаи, когда строительство начинали с выравнивания площадки, то есть ликвидации «индивидуальности», свойственной данному участку, которая в сочетании с элементами благоустройства могла быть основой для запоминающейся пространственной композиции.

В Нукусе много шума создает автотранспорт, поэтому нельзя удовлетворяться прежней постановкой домов вдоль улиц, застройкой по периметру квартала. Сама жизнь подсказывает необходимость некоторого удаления жилья от городского шума, что делают жители массивов «Кум аул», «Май-колхоз», «Ашшыкуль» и др.

«Свободная планировка», как ее еще называют, основывается на рациональной организации пространства, на единстве красоты и целесообразности и является основой для гармоничного развития современного жилищного строительства в столице Республики Каракалпакстан. Композиция застройки понимается как цельный комплекс, в котором все должно гармонично сочетаться — объемы зданий, окружающая природа, благоустройство, включая и то, что принято называть «малыми формами» — киоски, стенды для рекламы, скамейки и др.

Примером творческого подхода к формированию пространства, умелого использования специфики местного ландшафта, арсенала художественных средств архитектуры могут служить жилые районы «Коскуль-1», «1 Май», «Урак балга», выросшие за последние годы на месте пригородных поселков. Шумные магистрали здесь не пересекают жилые кварталы. Запоминается общественно-торговый центр с ведущими к нему подходами-ступенями. Отрадно, что озеленению, благоустройству новых жилых районов сейчас повсеместно уделяется все больше и больше внимания. Бережно сохраняются существующие зеленые насаждения, высаживаются новые посадки [10].

Раньше стремились строить на века. В долговечности и прочности строители видели основное преимущество каменного дома. Сегодня мы начинаем убеждаться в том, что дом часто не отвечает требуемому уровню удобств, комфорта еще задолго до того, как проявляются какие-либо признаки разрушения. Необходимость предвидения подобной проблемы очевидна. Зарубежные архитекторы, работающие над проектами жилища будущего, предусматривают даже возможность перемещения блоков квартир, снятия с несущего каркаса в одном городе и доставку в другой, возможность использования их в летнее время как загородного дома среди природы. В данном случае предусматривается определенная «мобильность» жилища. Одно-двухэтажный дом, по замыслу зарубежных архитекторов, можно будет расширить путем пристройки нужной площади. Учитывая ландшафт столицы Республики Каракалпакстан, одно-двухэтажный дом — это взгляд в будущее.

Перспективы развития градостроительства в столице Республики Каракалпакстан непосредственно связаны с ростом промышленного производства. Этого можно достичь за счет:

– расширения, реконструкции, технического перевооружения действующих предприятий Нукуса;

– опережающего роста энергетики и создания новых отраслей промышленности, определяющих научно-технический прогресс: машиностроение, радиоэлектроника, электротехника, горнорудная, металлургическая и химическая промышленность;

– ускоренного развития строительной индустрии и промышленности строительных материалов, создания на базе местных сырьевых ресурсов комплекса предприятий по производству цемента, шифера, асбоцементных труб, огнеупоров, отделочных и изоляционных материалов, керамических и сантехнических изделий, высококачественного щебня, а также производства строительных изделий и конструкций из прогрессивных строительных материалов (полиэтиленовые дренажные трубы);

– доведения мощностей предприятий по ремонту и обслуживанию промышленного оборудования, строительных, дорожных и сельскохозяйственных машин и механизмов до уровня, обеспечивающего потребности народного хозяйства в этих видах работ на месте;

– дальнейшего развития предприятий по переработке сельскохозяйственного сырья и выпуска из него готовой продукции, а также производства товаров народного потребления;

– создания филиалов предприятий машиностроения, приборостроения, радиотехники, особенно по сборке готовой продукции, а также легкой и пищевой промышленности;

– развития местной промышленности на базе местных сырьевых ресурсов и отходов производства.

Уверены, что действующие промышленные районы — Нукусско-Ходжейлийский, Султануиздагский и Кунградско-Кушканатауский — дадут основу для такой перспективы. Например, в Нукусско-Ходжейлийском (Центральном) районе наряду с имеющейся здесь промышленностью можно развивать трудоемкие отрасли за счет размещения предприятий машиностроения, радиоэлектроники, приборостроения, электротехники, а также отраслей, удовлетворяющих потребности населения (текстильная, легкая и пищевая).

Султануиздагский район — единственный в низовьях Амударьи и уникальный в Центральной Азии, где на небольшой территории (в радиусе 25 км) выявлены богатейшие запасы различных видов полезных ископаемых: железная руда, цементное сырье, огнеупор, тальк, высококачественный щебень, мрамор, гранит, гипс, сырье для производства абразивов, минеральная вата, отделочные и изоляционные материалы. В поселках Каратау и Джумуртау имеется перспектива строительства предприятий промышленности — комбинат по производству цемента, шифера и асбоцементных труб, заводы по производству огнеупоров, изоляционных материалов, минеральной ваты, перегородочных плит, талькового комбината.

В 1992 г. было объявлено, что на базе существующих рабочих поселков Каратау и Джумуртау будет создан новый город и столица переедет туда. Но это отдаленная перспектива.

Вывод

Общеизвестно, что в период советской системы правления новые промышленные предприятия строились главным образом в Ташкентском регионе, а также в Зарафшанской и Ферганской долинах. Именно здесь отмечается более плотное размещение городских поселений и относительно высокий уровень урбанизации областей. Исключение составлял Каракалпакстан в связи со специфическими природно-географическими условиями и особенностями хозяйственного развития, однако с обретением Республикой Узбекистан национальной независимости ситуация резко изменилась.

Формирование городской агломерации явилось новой фазой развития Нукуса, столицы Республики Каракалпакстан. Оно было вызвано не только промышленным развитием региона и его стратегической роли в системе экономики Узбекистана, но и другими факторами (экологические проблемы, демографические процессы, социально-экономическая ситуация и др.). Во многом формирование городской агломерации в условиях города происходило стихийно, фактически образовываясь перемещением физических лиц к черте города и их оседанием на свободных территориях. Эти поселения юридически оформлялись с течением некоторого времени, и лишь к началу XXI века оформились как пригородные зоны с городским административным управлением. Однако до сих пор остаются актуальными вопросы формирования на этих территориях новой социально-культурной инфраструктуры, создание новых рабочих мест.

Нукус, с точки зрения строительства, имеет широкие перспективы. Во многом наиболее актуальной проблемой является обустройство центра города и формирование нескольких территориальных центров в наиболее населенных частях города. Необходимо структурирование и строительство новых социально-культурных объектов в пригородной зоне, частью и в самом городе (микрорайоны, старая часть Нукуса).

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ON FINITE τ-MINIMAL NON-$\mathfrak{F}$ -GROUPS FOR Ω-FOLIATED FORMATION $\mathfrak{F}$

***Abstract**: Only finite groups are considered. Properties of τ-minimal non-$\mathfrak{F}$ -groups are studied for the Ω-foliated formation $\mathfrak{F}$, where τ is a subgroup functor. A group G is called a τ-minimal non-$\mathfrak{F}$ -group if $G \notin \mathfrak{F}$, but every proper τ-subgroup of G belongs to the class $\mathfrak{F}$. We have established necessary and sufficient conditions under which a group G is a τ-minimal non-$\mathfrak{F}$ -group. We have researched the influence of the properties of τ-minimal non-$\mathfrak{F}$ -groups on the structure of the Ω-foliated formation $\mathfrak{F}$.*

***Key words**: a finite group, a class of groups, a formation, an Ω-foliated formation, a τ-minimal non-$\mathfrak{F}$ -group.*

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О КОНЕЧНЫХ τ-МИНИМАЛЬНЫХ НЕ $\mathfrak{F}$ -ГРУППАХ ДЛЯ Ω-РАССЛОЕННОЙ ФОРМАЦИИ $\mathfrak{F}$

***Аннотация**: Рассматриваются только конечные группы. Изучаются свойства τ-минимальных не $\mathfrak{F}$ -групп для Ω-расслоенной формации $\mathfrak{F}$, где τ – подгрупповой функтор. Группа G называется τ-минимальной не $\mathfrak{F}$ -группой, если $G \notin \mathfrak{F}$, но каждая собственная τ-подгруппа группы G принадлежит классу $\mathfrak{F}$. Установлены необходимые, достаточные условия, при которых группа G является τ-минимальной не $\mathfrak{F}$ -группой. Исследовано влияние свойств τ-минимальных не $\mathfrak{F}$ -групп на строение Ω-расслоенной формации $\mathfrak{F}$.*

***Ключевые слова**: конечная группа, класс групп, формация, Ω-расслоенная формация, τ-минимальная не $\mathfrak{F}$ -группа.*

Введение

Теория классов групп занимает одно из центральных мест в современной алгебре. В теории конечных групп важную роль играет понятие τ-минимальной не $\mathfrak{F}$-группы, где $\mathfrak{F}$ – некоторый класс конечных групп. Группа G называется минимальной не $\mathfrak{F}$-группой, если $G \notin \mathfrak{F}$, но всякая собственная подгруппа группы G принадлежит классу $\mathfrak{F}$. К таким группам относятся хорошо известные группы Миллера-Морено (минимальные неабелевы группы), группы Шмидта (минимальные ненильпотентные группы) и другие (см., например, [12, глава VI]). Большой вклад в изучение минимальных не $\mathfrak{F}$-групп для произвольной формации $\mathfrak{F}$ внес В.Н. Семенчук (см., например, [6–8]). С развитием теории подгрупповых функторов стали рассматриваться τ-минимальные не $\mathfrak{F}$-группы, где τ – подгрупповой функтор. Исследованию τ-минимальных не $\mathfrak{F}$ -групп для локальной формации $\mathfrak{F}$ уделяется большое внимание в монографии А.Н. Скибы «Алгебра формаций» [11]. Исследованиями в данном направлении занимались В.Н. Семенчук, В.Ф. Велесницкий и др. (см., например, [9, 10, 16]).

В 1999 году В.А. Ведерников ввел в рассмотрение Ω-расслоенные формации конечных групп (см., например [13]). Исследованием различных видов Ω-расслоенных формаций занимались Д.Г. Коптюх, М.А. Корпачева, Ю.А. Еловикова, С.В. Чиспияков, Е.Н. Демина, М.М. Сорокина и другие (см., например, [2, 3, 5]).

Целью данной работы является изучение свойств τ-минимальных не $\mathfrak{F}$-групп для Ω-расслоенной формации $\mathfrak{F}$. В работе решены следующие задачи: в теоремах 1 и 2 соответственно получены достаточные и необходимые условия, при которых группа G является τ-минимальной не $\mathfrak{F}$-группой; в теореме 3 исследовано влияние свойств τ-минимальных не $\mathfrak{F}$-групп на строение Ω-расслоенной формации $\mathfrak{F}$.

Рассматриваются только конечные группы. В работе используются классические методы теории групп и теории классов групп. Используемые определения и обозначения для групп и классов групп стандартны, их можно найти в [1]. Приведем лишь некоторые из них.

Классом групп называется множество групп, содержащее вместе с каждой своей группой и все группы, ей изоморфные [12, с. 9]. Если $\mathfrak{F}_1$ и $\mathfrak{F}_2$ – классы групп, то

$$\mathfrak{F}_1\mathfrak{F}_2 = (G \mid \text{существует } N \lhd G,$$
$$\text{где } N \in \mathfrak{F}_1, G/N \in \mathfrak{F}_2)$$ [1, с. 338, с. 566].

Класс групп $\mathfrak{F}$ называется *формацией*, если выполняются следующие два условия:

1) если $G \in \mathfrak{F}$ и $N \lhd G$, то $G/N \in \mathfrak{F}$;

2) если $G/N_1 \in \mathfrak{F}$ и $G/N_2 \in \mathfrak{F}$, то $G/N_1 \cap N_2 \in \mathfrak{F}$ [1, с. 272].

Класс групп $\mathfrak{F}$ называется *классом Фиттинга,* если выполняются следующие два условия:

1) если $G \in \mathfrak{F}$ и $N \lhd G$, то $N \in \mathfrak{F}$;

2) если $G = N_1N_2$, $N_1 \lhd G$, $N_2 \lhd G$, $N_1, N_2 \in \mathfrak{F}$, то $G \in \mathfrak{F}$ [1, с. 274].

Через $G^{\mathfrak{F}}$ обозначается $\mathfrak{F}$-*корадикал* группы G, т.е. наименьшая нормальная подгруппа группы G, фактор-группа по которой принадлежит $\mathfrak{F}$, где $\mathfrak{F}$ – формация. Через $G_{\mathfrak{F}}$ обозначается $\mathfrak{F}$-*радикал* группы $\mathfrak{F}$, т.е. наибольшая нормальная подгруппа группы G, принадлежащая классу Фиттинга $\mathfrak{F}$. В дальнейшем, $\mathbb{P}$ обозначает множество всех простых чисел. Пусть $\mathfrak{X}$ – непустое множество групп. Через $(\mathfrak{X})$ обозначается класс групп, порожденный $\mathfrak{X}$; в частности, (G) – класс всех групп, изоморфных группе G; $K(G)$ – класс всех простых групп, изоморфных композиционным факторам группы G. Пусть $\mathfrak{E}$ – класс всех конечных групп, $\mathfrak{I}$ – класс всех простых конечных групп, Ω – непустой подкласс класса $\mathfrak{I}$. Пусть $\mathfrak{F}$ – класс групп, $p \in \mathbb{P}$, $\emptyset \neq \pi \subseteq \mathbb{P}$. Тогда $\mathfrak{F}_p$ и $\mathfrak{F}_\pi$ – соответственно классы всех p-групп и π-групп, принадлежащих классу $\mathfrak{F}$. Если $K(G) \subseteq \Omega$, то группа G называется Ω-*группой*; $\mathfrak{E}_\Omega$ – класс всех Ω-групп; $O_\Omega(G) = G_{\mathfrak{E}_\Omega}$. Через $\mathfrak{S}_{cA}$ обозначается класс всех тех конечных групп, у которых каждый главный A-фактор является центральным. Функции

$$f : \Omega \cup \{\Omega'\} \rightarrow \{\text{формации групп}\},$$

где $f(\Omega') \neq \emptyset$,

$$h : \mathfrak{I} \rightarrow \{\text{формации групп}\},$$
$$\varphi : \mathfrak{I} \rightarrow \{\text{непустые формации Фиттинга}\},$$

принимающие одинаковые значения на изоморфных группах из области определения, называются соответственно *Ω-функцией*, *F-функцией* и *FR-функцией*. Формация

$$\mathfrak{F} = (G \in \mathfrak{E} \mid G/O_\Omega(G) \in f(\Omega') \textit{ и } G/G_{\varphi(A)} \in f(A) \textit{ для любого } A \in K(G) \cap \Omega)$$

называется *Ω-расслоенной формацией* с *Ω-спутником f* и *направлением φ* (*кратко, $\Omega\varphi$-расслоенной формацией*) и обозначается $\mathfrak{F} = \Omega F(f, \varphi)$. Формация

$$\mathfrak{H} = (G \in \mathfrak{E} \mid G/G_{\varphi(A)} \in h(A) \textit{ для любого } A \in K(G))$$

называется *расслоенной формацией со спутником h* и *направлением φ* (*кратко, φ-расслоенной формацией*) и обозначается $\mathfrak{H} = F(h, \varphi)$ [15, с. 127]. Через φ_0 обозначается направление Ω-свободной (свободной) формации, т.е. $\varphi_0(A) = \mathfrak{E}_{A'}$ для любого $A \in \mathfrak{I}$; φ_2 – направление Ω-биканонической (биканонической) формации, т.е. $\varphi_2(A) = \mathfrak{E}_{A'}$ для любой неабелевой группы $A \in \mathfrak{I}$ и $\varphi_2(A) = \mathfrak{E}_{A'}\mathfrak{E}_A$ для любой абелевой группы $A \in \mathfrak{I}$; $\varphi_2{}'$ – направление Ω-канонической (канонической) формации, т.е. $\varphi_2{}'(A) = \mathfrak{E}_{A'}\mathfrak{E}_A$ для любого $A \in \mathfrak{I}$; φ_3 – направление Ω-композиционной (композционной) формации, т.е. $\varphi_3(A) = \mathfrak{S}_{cA}$ для любого $A \in \mathfrak{I}$ [15, с. 128]. Направление φ Ω-расслоенной (расслоенной) формации называется *b-направлением*, если $\varphi(A)\mathfrak{E}_A = \varphi(A)$ для любой абелевой группы $A \in \mathfrak{I}$; *b_A-направлением*, где $A \in \mathfrak{I}$, если $\varphi(A)\mathfrak{E}_A = \varphi(A)$; *$r$-направлением*, если $\varphi(A) = \mathfrak{E}_{A'}\varphi(A)$ для любой группы $A \in \mathfrak{I}$ [13, с. 56].

Пусть τ – отображение, которое ставит в соответствие каждой группе G некоторую непустую систему $\tau(G)$ ее подгрупп. Отображение τ называется *подгрупповым функтором*, если $(\tau(G))^\varphi = \tau(G^\varphi)$ для любого изоморфизма φ каждой группы G [4, с. 13]. Подгруппы группы G, принадлежащие $\tau(G)$, называются *τ-подгруппами* группы G.

Подгрупповой функтор τ называется *регулярным*, если для любой группы G выполняются два условия:

1) если $N \lhd G$, $M \in \tau(G)$, то $MN/N \in \tau(G/N)$;

2) если $M/N \in \tau(G/N)$, то $M \in \tau(G)$ [4, с. 197].

Пусть $\mathfrak{F}$ – непустой класс Фиттинга. Подгрупповой функтор τ назовем $\mathfrak{F}$ -

радикальным, если для любой группы G и для любой $N \in \tau(G)$ справедливо $G_{\mathfrak{F}} \cap N = N_{\mathfrak{F}}$. Пусть φ – FR-функция. Подгрупповой функтор τ назовем *φ-радикальным*, если τ является $\varphi(A)$-радикальным для всех $A \in \mathfrak{I}$. Пусть $\mathfrak{F}_1$ и $\mathfrak{F}_2$ – непустые классы Фиттинга. Подгрупповой функтор τ назовем *$\mathfrak{F}_1$- $\mathfrak{F}_2$-радикальным*, если τ является $\mathfrak{F}_1$-радикальным и $\mathfrak{F}_2$-радикальным.

Формация $\mathfrak{F}$ называется *τ-замкнутой*, если $\tau(G) \subseteq \mathfrak{F}$ для любой группы $G \in \mathfrak{F}$ [11, с. 23]. Ω-спутник Ω-расслоенной формации $\mathfrak{F}$ называется *τ-замкнутым*, если все его значения являются τ-замкнутыми формациями.

Пусть $\mathfrak{F}$ – класс групп, τ – подгрупповой функтор. Группа G называется *τ-минимальной не $\mathfrak{F}$-группой*, если $G \notin \mathfrak{F}$, но каждая собственная τ-подгруппа группы G принадлежит классу F [11, с. 38]. Через $M_\tau(\mathfrak{F})$ обозначается класс всех τ-минимальных не $\mathfrak{F}$ -групп.

Сформулируем известные результаты, используемые в работе.

Лемма 1 (Лемма 2 (1) [13, с. 57]). *Пусть $\mathfrak{F} = \Omega F(f,\varphi)$ – Ω-расслоенная формация с r-направлением φ. Тогда если $A \in \Omega$, $G/O_A(G) \in \mathfrak{F}$ и $G/G_{\varphi(A)} \in f(A)$, то $G \in \mathfrak{F}$.*

Лемма 2 (Лемма 10 (1) [14, с. 1003]). *Пусть $A \in \Omega$, $\mathfrak{F}$ – Ω-расслоенная формация с внутренним Ω-спутником f и $b_A r$ -направлением φ. Тогда выполняется $\mathfrak{E}_A f(A) \subseteq \mathfrak{F}$.*

Лемма 3 (Лемма 3 [9, с. 429]). *Каждая группа G, не принадлежащая некоторому классу групп $\mathfrak{X}$, содержит по крайней мере одну минимальную не $\mathfrak{X}$ -группу.*

Лемма 4 (Теорема 5 [15, с. 132]). *Пусть $\mathfrak{X}$ – непустой класс групп. Тогда Ω-расслоенная формация $\mathfrak{F} = \Omega F(\mathfrak{X},\varphi)$ с направлением φ, где $\varphi_0 \leq \varphi$, обладает единственным минимальным Ω-спутником f таким, что*

$$f(\Omega') = form(G/O_\Omega(G) | G \in \mathfrak{X}),$$
$$f(A) = form(G/G_{\varphi(A)} | G \in \mathfrak{X}) \text{ для всех}$$
$$A \in K(\mathfrak{X}) \cap \Omega \text{ и } f(A) = \emptyset, \text{ если } A \in \Omega \backslash K(\mathfrak{X}).$$

Лемма 5 (Лемма 1 (7) [13, с. 57]). *Пусть $\mathfrak{F}$ – формация, G – группа, $N \lhd G$. Тогда если $\mathfrak{F}$ – формация Фиттинга, $\mathfrak{E}_{A'}\mathfrak{F} = \mathfrak{F}$ и $N \in \mathfrak{E}_{A'}$, то $(G/N)_{\mathfrak{F}} = G_{\mathfrak{F}}/N$.*

В следующей теореме для Ω-расслоенной формации $\mathfrak{F}$ установим достаточные условия, при которых конечная группа G является τ-минимальной не $\mathfrak{F}$ -группой.

Теорема 1.

Пусть G – группа, $A \in \Omega \cap K(G)$, φ – r-направление Ω-расслоенной формации, τ – регулярный $\mathfrak{E}_A$-$\varphi(A)$-радикальный подгрупповой функтор, $\mathfrak{F}$ – τ-замкнутая Ω-расслоенная формация с направлением φ и Ω-спутником f. Если $G/O_A(G) \in \mathfrak{F}$, $G_{\varphi(A)} \subseteq H$ для любой τ-подгруппы H группы G и $G/G_{\varphi(A)} \in M_\tau(f(A))$, то $G \in M_\tau(\mathfrak{F})$.

Доказательство. Пусть $G/O_A(G) \in \mathfrak{F}$, $G_{\varphi(A)} \subseteq H$ для любой τ-подгруппы H группы G и $G/G_{\varphi(A)} \in M_\tau(f(A))$. Покажем, что $G \in M_\tau(\mathfrak{F})$. Так как $G/G_{\varphi(A)} \notin f(A)$ и $A \in \Omega \cap \mathrm{K}(G)$, то по определению Ω-расслоенной формации $G \notin \mathfrak{F}$. Пусть H – собственная τ-подгруппа группы G. Покажем, что $H \in \mathfrak{F}$. В силу леммы 1, установим, что $H/O_A(H) \in \mathfrak{F}$. Поскольку $H \in \tau(G)$, то, ввиду регулярности подгруппового функтора τ, получаем, что $HO_A(G)/O_A(G) \in \tau(G/O_A(G))$. Так как по условию теоремы $G/O_A(G) \in \mathfrak{F}$ и $\mathfrak{F}$ – τ-замкнутая формация, то $HO_A(G)/O_A(G) \in \mathfrak{F}$ и, значит, $H/H \cap O_A(G) \in \mathfrak{F}$. Поскольку τ – $\mathfrak{E}_A$-радикальный подгрупповой функтор, то $H \cap O_A(G) = O_A(H)$ и $H/O_A(H) \in \mathfrak{F}$.

Покажем, что $H/H_{\varphi(A)} \in f(A)$. Из $H \in \tau(G)$ и регулярности подгруппового функтора τ получаем, что $HG_{\varphi(A)}/G_{\varphi(A)} \in \tau\big(G/G_{\varphi(A)}\big)$. Если $HG_{\varphi(A)}/G_{\varphi(A)} = G/G_{\varphi(A)}$, то $HG_{\varphi(A)} = G$ и, ввиду $G_{\varphi(A)} \subseteq H$, имеем $H = G$, что противоречит выбору H. Поэтому $HG_{\varphi(A)}/G_{\varphi(A)} < G/G_{\varphi(A)}$. Так как по условию $G/G_{\varphi(A)} \in M_\tau(f(A))$, то

$$HG_{\varphi(A)}/G_{\varphi(A)} \cong H/H \cap G_{\varphi(A)} \in f(A).$$

Тогда, в силу $\varphi(A)$-радикальности подгруппового функтора τ, справедливо $H/H_{\varphi(A)} \in f(A)$.

Таким образом, $A \in \Omega$, $H/O_A(H) \in \mathfrak{F}$ и $H/H_{\varphi(A)} \in f(A)$. Поскольку направление φ является r-направлением, то по лемме 1 получаем, что $H \in \mathfrak{F}$. Следовательно, $G \in M_\tau(\mathfrak{F})$. Теорема доказана.

Следствие 1. *Пусть G – группа, $A \in \mathfrak{I}$, φ – r-направление расслоенной формации, τ – регулярный $\mathfrak{E}_A$-$\varphi(A)$-радикальный подгрупповой функтор, $\mathfrak{F}$ – τ-замкнутая расслоенная формация с направлением φ и спутником f. Если $G/O_A(G) \in \mathfrak{F}$, $G_{\varphi(A)} \subseteq H$ для любой τ-подгруппы H группы G и $G/G_{\varphi(A)} \in M_\tau(f(A))$, то $G \in M_\tau(\mathfrak{F})$.*

В следующей теореме для Ω-расслоенной формации $\mathfrak{F}$ установим необходимые условия, при которых конечная группа G является τ-минимальной не $\mathfrak{F}$ -группой.

Теорема 2.

Пусть φ – r-направление Ω-расслоенной формации, τ – регулярный φ-радикальный подгрупповой функтор, $\mathfrak{F}$ – τ-замкнутая Ω-расслоенная формация с направлением φ и Ω-спутником f, $\Omega \subseteq K(\mathfrak{F})$. Если $G \in M_\tau(\mathfrak{F})$ и $G/O_\Omega(G) \in f(\Omega')$, то $G/G_{\varphi(A)} \in M_\tau(f(A))$ для некоторого $A \in \Omega \cap K(G)$.

Доказательство. Пусть $G \in M_\tau(\mathfrak{F})$ и $G/O_\Omega(G) \in f(\Omega')$. Если $G/G_{\varphi(B)} \in f(B)$ для любого $B \in \Omega \cap K(G)$, то $G \in \mathfrak{F}$, что невозможно.

Следовательно, $G/G_{\varphi(A)} \notin f(A)$ для некоторого $A \in \Omega \cap K(G)$.

Пусть $L/G_{\varphi(A)} \in \tau(G/G_{\varphi(A)})$ и $L/G_{\varphi(A)} < G/G_{\varphi(A)}$. Покажем, что $L/G_{\varphi(A)} \in f(A)$. Ввиду регулярности подгруппового функтора τ, L является собственной τ-подгруппой группы G. Из $G \in M_\tau(\mathfrak{F})$ получаем, что $L \in \mathfrak{F}$, и, значит, $L/L_{\varphi(B)} \in f(B)$ для любого $B \in \Omega \cap K(L)$.

Так как подгрупповой функтор τ является φ-радикальным, то $L \cap G_{\varphi(A)} = L_{\varphi(A)}$ и

$$L/L_{\varphi(A)} = L/L \cap G_{\varphi(A)} \cong LG_{\varphi(A)}/G_{\varphi(A)} = = L/G_{\varphi(A)}.$$

Если $A \in K(L)$, то $L/L_{\varphi(A)} \in f(A)$ и, следовательно, $L/G_{\varphi(A)} \in f(A)$.

Пусть $A \notin K(L)$. Так как направление φ является r-направлением, то $L \in \mathfrak{E}_{A'} \subseteq \mathfrak{E}_{A'}\varphi(A) = \varphi(A)$ и, значит, $L_{\varphi(A)} = L$. Пусть f_1 – минимальный Ω-спутник формации $\mathfrak{F}$. Так как $\mathfrak{F} = \Omega F(\mathfrak{F}, \varphi)$ и $A \in \Omega \cap K(\mathfrak{F})$, то по лемме 4 $f_1(A) \neq \emptyset$ и поэтому $L/G_{\varphi(A)} \cong L/L_{\varphi(A)} = 1 \in f_1(A)$. Поскольку f – Ω-спутник формации $\mathfrak{F}$, то, согласно лемме 4, $f_1 \leq f$. Поэтому $L/G_{\varphi(A)} \in f(A)$. Таким образом, $G/G_{\varphi(A)} \in M_\tau(f(A))$. Терема доказана.

<u>Следствие 2.</u> *Пусть φ – r-направление расслоенной формации, τ – регулярный φ-радикальный подгрупповой функтор, $\mathfrak{F}$ – τ-замкнутая расслоенная формация с направлением φ и спутником f, $K(\mathfrak{F}) = \mathfrak{I}$. Если $G \in M_\tau(\mathfrak{F})$, то $G/G_{\varphi(A)} \in M_\tau(f(A))$ для некоторого $A \in K(G)$.*

В следующей теореме исследуем влияние свойств τ-минимальных не $\mathfrak{F}$ -групп на строение Ω-расслоенной формации $\mathfrak{F}$.

<u>Теорема 3.</u> *Пусть $A \in \Omega$, $\mathfrak{F}$ – τ-замкнутая Ω-расслоенная формация с $b_A r$-направлением φ и внутренним Ω-спутником f, где τ – регулярный $\varphi(A)$-радикальный подгрупповой функтор. Если всякая τ-минимальная не $\mathfrak{F}$ -группа обладает минимальной нормальной подгруппой, содержащей $f(A)$-корадикал группы, то $M(f(A)) \cap \mathfrak{E}_A\mathfrak{F} \subseteq \mathfrak{F}$.*

<u>Доказательство</u>. Пусть всякая τ-минимальная не $\mathfrak{F}$ -группа обладает минимальной нормальной подгруппой, содержащей $f(A)$-корадикал группы. Покажем, что $M(f(A)) \cap \mathfrak{E}_A\mathfrak{F} \subseteq \mathfrak{F}$. Предположим, что найдется $G \in (M(f(A)) \cap \mathfrak{E}_A\mathfrak{F})\backslash\mathfrak{F}$. Тогда, согласно лемме 3, в G существует минимальная не $\mathfrak{F}$ -подгруппа H. Если $H < G$, то ввиду $G \in M(f(A))$, получаем $H \in f(A) \subseteq \mathfrak{F}$. Противоречие. Следовательно, $H = G$ и, значит, G – минимальная не $\mathfrak{F}$ -группа, а значит, и τ-минимальная не $\mathfrak{F}$ -группа.

По условию в группе G существует минимальная нормальная подгруппа N такая, что $G^{f(A)} \subseteq N$. Покажем, что $G/N \in f(A)$. Согласно теореме о гомоморфизмах, имеем

$$G/N \cong (G/G^{f(A)})/(N/G^{f(A)}).$$

По определению $f(A)$-корадикала $G/G^{f(A)} \in f(A)$. В силу того, что $f(A)$ – формация, получим, что $G/N \in f(A)$. Возможны следующие случаи.

Пусть N – A-группа. Тогда по лемме 2 $G \in \mathfrak{E}_A f(A) \subseteq \mathfrak{F}$. Противоречие.

Пусть N – A'-группа. Поскольку φ является r-направлением формации $\mathfrak{F}$, то, согласно лемме 5, $(G/N)_{\varphi(A)} = G_{\varphi(A)}/N$. Так как $G/N \in f(A)$ и $f(A)$ – формация, то $(G/N)/(G/N)_{\varphi(A)} \in f(A)$ и, значит, $G/G_{\varphi(A)} \in f(A)$ (1). По условию $G \in M(f(A)) \cap \mathfrak{E}_A\mathfrak{F} \subseteq \mathfrak{E}_A\mathfrak{F}$ и, поэтому, справедливо $G/O_A(G) \in \mathfrak{F}$ (2). Из (1) и (2), ввиду леммы 1, получаем, что $G \in \mathfrak{F}$. Противоречие.

Таким образом, $M(f(A)) \cap \mathfrak{E}_A\mathfrak{F} \subseteq \mathfrak{F}$. Теорема доказана.

<u>Следствие 3.</u> *Пусть $\mathfrak{F}$ – τ-замкнутая расслоенная формация с b_A-направлением φ и внутренним спутником f, где τ – регулярный $\varphi(A)$-радикальный подгрупповой функтор для некоторого $A \in \mathfrak{I}$. Если всякая τ-минимальная не $\mathfrak{F}$ -группа обладает минимальной нормальной подгруппой, содержащей $f(A)$-корадикал группы, то $M(f(A)) \cap \mathfrak{E}_A\mathfrak{F} \subseteq \mathfrak{F}$.*

<u>Замечание 1.</u> Поскольку направления φ_0, φ_2, φ_2', φ_3 являются r-направлениями, то из теорем 1 – 3 вытекают результаты для Ω-свободных, Ω-биканонических, Ω-канонических и Ω-композиционных (соответственно для свободных, биканонических, канонических и композиционных) формаций конечных групп.

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SOCIO-ECONOMIC NECESSITY OF FINANCING JOINT-STOCK COMPANIES

***Abstract**: The article discusses the procedures for creating joint stock companies, the requirements for its authorized capital, the formation of monetary funds of joint stock companies.*

***Key words**: finance, cash, authorized capital, property, joint stock companies, reproduction, government agencies.*

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Introduction

The attention to the theoretical basis and practical problems of financial relations in 80-90 years has moved to a certain extent, and this is completely legal: the search for ways to increase the essence of Finance propels the theory of Finance and the object of studying the practice of financial relations from all sides. Finance is a complex, multifaceted economic category.

The experience of previous years has shown that it is impossible to carry out activities on the deepening and further development of financial relations without deep theoretical work. That is why Economist scientists are increasingly turning to the problems of the theory of Finance.

Relying on the theoretical heritage of classics and economists about finance, foreign and knowledge of our country siljidi much earlier in the following years, undoubtedly, in the research of financial problems.

The results of theoretical work are reflected in practical measures to ensure the stability of the development of the economy, the reconstruction of social life, the transition to new financial economic relations.

The complexity of the concept of finance, the versatility and complexity of its manifestation make it a diverse approach to understanding its social economic nature.

Finance of joint-stock companies (JSC) is an economic relationship in market conditions and is used to organize the effective development of the economy. It is based on objective laws, due to the fact that finance is considered an important part of market relations. However, when considering this issue, the role of finance in the overall system of market relations is often not sufficiently disclosed.

At the same time as the development of market relations, on the basis of the wide use of finance, their level of quality is constantly growing, there is a constant development and improvement of the entire system of commodity-money relations, which serves this process. For example, in the Republic of Uzbekistan at the last moment a wide set of measures on strengthening financial relations has been implemented, which serves to improve the structure of the market infrastructure, in particular, the management of the Joint Stock Companies.

The implementation of measures to improve the economic relations of the companies with various market-oriented entities is taking place in conditions of a significant increase in the role of the companies in the general system of market relations as a key part of the society. The formation of market relations in the Republic of Uzbekistan indicates that a complete new financial system has emerged, which serves to attract resources for the implementation of socio-economic development plans, provides structural restructuring and joint stock-up of economic entities. The complete new character of Public Finance is closely related to the characteristics of Public Finance based on the market method of production and their specific role in the market economy.

To the new form of ownership, as the basis of market Relations, new forms of production relations, the general system of all relations in society itself are also characteristic. Aktsiy public finance is involved both as part of the production relationship and as a market relationship expressed through monetary relations. In the practice of conducting market economy, operating a variety of forms of ownership, it is envisaged to comply with the norms of relations arising from the character of this type of ownership, its nature. Shares ko'z the Finance of societies implies strengthening it, being in a thrifty and initiative relationship to it, serving more thantirishga. The essence of the distributive effect on the economic interests of the participants in production is both and the main direction.

In the system of market relations, the stockadorlik the Finance of societies is involved in their most important component – the value of the added product taqsimlash, the creation of revenue and savings, the production of extended repetitions and shares on their basisadorlik as a specific form of economic relations that reflects the distributive relationships that arise on the issues of centralized and decentralized

Stockadorlik determination of the essence of the finances of societies means the disclosure of their main, most important aspects as a divisive, economic category in the whole complex of market relations. This can be achieved by means of monetary funds, which, first, reveal the role of Finance in the system of market relations and its components; secondly, reveal the material aspects of finance or, in other words, are formed on the basis of incomes, savings and their basis, the final result of financial relations is calculated.

Production relations in the conditions of market activity up to consumption shareadorlik represents the sum of new types of material economic relations between workers in the production process in the society. In order to understand their nature and the position of Finance in the complex of production relations, it should be noted that not all relations that arise in the process of organizing and carrying out Labor, also do not create additional products. Here they can be divided into two groups.

First, the relationship that arises in the process of Labor and is based on the technological and organizational characteristics of the implementation of the labor process. Among them, it is possible to include, for example, the relationship between production teams related to the technological distribution of labor, or the relationship between workers of different professions, companies of Stockadorlik and performers, which is based on the technological distribution of labor within the framework of a single production team, that is, companies of stockadorlik.

Secondly, in the process of labor, economic relations arise between workers. It represents the relationship between the workers involved in production through the calculation of the means of their production, that is, who owns them: the state, individual persons or their groups. Ownership relations determine the character of Financial Relations, their essence. In cases where the means of production are community property, AJ forms the basis of economic relations as a relationship with which the ultimate goal is to satisfy the economic interests of all its participants. Such a relationship is typical for a market economy, in which the means of production become the main idea of the socio-economic system to be the property of the community. But on the basis of economic relations, private property, the situation in which the means of production are attributed to individual owners, is completely different. In the conditions of such economic relations, there will be inequality in the right to property in the process of Labor. Means of production in the process of Labor the owners of the property deprive their direct producers of the right to possess the results of full labor, thereby assimilating unpaid labor or its results.

Hence, property relations determine the essence of all spheres of economic relations (production, turnover, taqsimlash and consumption), are reflected in the method of combining the producer with the means of production, determine the nature of the relationship between employees in the process of material blessings taqsimlash. Shareadorlik fully reflect the general essence of the society, which is based on their property relations, as a component of the entire system of economic and production relations .tiradi Hence, the Finance of the stockadorlik society is considered to belong to the second group of relations that arise in the process of organization and implementation of Labor and production in the conditions of market relations, that is, economic relations.

Due to the nature of the production-technical relationship, finance is not directly involved in this relationship. But nevertheless, Finance has an impact on the hemp production process at all its stages. This is primarily due to the fact that the reproduction process is practically continuous, and its individual stages are affected by each other and occur in strong contact.

At the production stage, the impact of Finance is manifested in such a way that the process itself takes place under the conditions of the validity of commodity – money relations as its two factors-the means of production and the interaction of the labor force, and the achievement of the goal set by the team: with minimal costs, he or she is subject to This is attributed to the satisfaction of economic interests, personal and collective interests to the final results of production, that is, the volume of additional products obtained in the form of an item and value (money).

Next, at the stage of taqsimlash and re taqsimlash, where the movement of the created product takes place to divide its value and the form of an item into two, the finances of the companiesadorlik acquire relative independence, income and savings are formed, funds are created. Then the effect on the circulation of funds in order to increase the efficiency of their functions and their use is manifested directly. As long as the whole iteration affects the production process, the economic interests of its participants, the Shareadorlik the Finance of the societies thus serves as the most important and dynamic part of the entire system of production relations, while their functioning will be related to the formation of income and savings, hence the implementation of taqsimlash processes.

Since the primary material is a form of development of social relations and productive forces, production relations are involved as a basis (basis) in relation to ideological relations and institutions. The concept of basis and predicate, their interrelationships serve as a methodological basis for the analysis of any particular society. It is also a kind of mandatory condition for analyzing the financial and production relations of the stock companies.

Stock the procedure for the formation of the authorized capital in the establishment of Joint-Stock Companies is reflected in Figure1.

As can be seen from the picture, for the shares placed in the establishment of the Stockadorlik Society, various forms of payment are used: a paid and non-paid form (in which they can be paid with securities of other market participants), other items ,ertyerty rights or other rights that have a monetary value. The monetary value of theertyerty, which is included as payment for shares in the establishment of society, is carried out by agreement between the foundations and is unanimously accepted by them.

The authorized capital is formed during the period established by the law" on protection of shareholders 'rights and societies". The law stipulates that est establishing a Joint-Stock Company, its shares must be paid in full. As a rule, in this case they are paid by the founders in nominal terms. The term of payment shall be determined by the agreement on the establishment of the company, which shall not exceed one year from the date of registration of the company. In addition, at least 50% of the shares distributed in the establishment of the society must be paid without three months from the date of the state registration of the society.

Picture 1. The order of formation of the authorized capital [1]

Indicator	Formation procedure
Regulation capital size	It is established in the agreement on the establishment of society, but it can not be less than the volume established by law.
The volume of payment for shares, which must be distributed among the founders.	In the agreement on the establishment of society, however, these shares are established in an amount not lower than their nominal value.
The size of the payment for the placed shares. Paid or without money.	It is established in the agreement on the establishment of society.
The size of the payment for the placed shares. Paid or without money.	Full-Society for a year from the date of state registration, if the agreement on the establishment of society does not provide for a shorter period of time.

The experience of reforming the economy shows that each new stage of its development will be associated with its own conditions, and at these stages it will be important that all participants in production in the current and final results will improve financial relations, ensuring the best combination of economic interests. In the same complex of all economic benefits, lies the economic interests of the community in the ultimate purpose of their mutual relations and achieving the results achieved.

The essence of the whole system of distribution relations consists in such a combination of economic interests. This is not achieved irregularly, but is an important function of state and state bodies, requires constant and thorough study of the essence and character of the changes that occur in the development of market relations, timely adoption of decisions on improving distribution relations. Because at each stage of market relations, the composition of the needs, based on both their own conditions of development of production and the economic interests of its participants, which are constantly changing, will also be characteristic.

[1] The law"on the protection of the rights of Joint-Stock Companies and shareholders", 2014. 6 may

In the system of market relations, the consideration of the position of the stockadorlik Finance of societies allows to draw such a conclusion that the stockadorlik Finance of societies is an integral part of the system of market relations, when participating as an economic distribution relationship, expressed in monetary terms, this relationship is directly related to the production forces associated with them under This means that the change in the level and character of development of the productive forces requires the improvement of financial relations of the stockadorlik societies, which reflects the distribution relations in which the economic interests of all participants in collective production are ensured, especially in the process of their implementation. Hence, finance as a taqismot is the most dynamic part of the entire system of market relations with respect to the final results of the production, taqsimlash and redistribution of additional products. Since the expression of economic relations whose dynamics are the highest, the financial mechanism of the stockadorlik societies can serve and inhibit the development of market relations to the same extent as that of other entities. It is for this reason that the timely improvement of the system of financial relations, finances is of vital importance for the social and economic development of the state, increasing the pace of production and increasing the number of financial resources.

Thus, the stockadorlik the Finance of societies is this – part of economic or production relations. The peculiarity of them is that they are carried out by means of monetary turnover and are directed to the collection of income and savings in the final account, the provision of the creation of monetary funds. In this way, these funds participate in the quality of material aspects of the results of economic relations, which are carried out in the form of money and are generalized in a broad sense by the concept of Finance. Without income and savings, the use of Finance will not be effective.

Through the economic relationship between the organization and use of funds, the process of material production, the coordination and pace of its development, the satisfaction of the individual and collective needs of the communities of the stockadorlik is ensured. The organization of centralized and decentralized monetary funds is manifested as an indispensable condition for the provision of an extended re-production process, since it takes place in the conditions of commodity-money relations, in which the accumulation of the necessary funds is carried out in the funds indicated for its financing before the process of production and consumption of material benefits.

As an expression of the material aspects of finance, the Monetary Fund summarizes all of the part of the financial resources and their government and stockadorlik society which is directed to solve the tasks arising from the specific tasks of economic and social development. This implies the economic nature and quantitative orientation of monetary funds, the sources of their financing are not always the same.

Centralized monetary funds are intended to meet the general public expenditure of production and non-production character and are carried out mainly on the account of the stockadorlik society by paying taxes and other mandatory payments to the budget.

Although the general expenditure of the stockadorlik societies is largely the same in terms of economic nature, nevertheless, each part of the money supply will have its own limits, which will be determined by a clearly defined objective and the social and economic development plans and state assignments for the specified period.

However, from this does not come the meaning that the procedure for such expenditure of funds of the Joint-Stock Companies determines the list of funds in which they are credited to their account.

This means that the formation by the companies of the stockadorlik of centralized monetary funds with strictly regulated processes, in which great work is carried out on drawing up economic and social development business plans before them, is carried out under the leadership of the members of the stockadorlik companies.

In the process of the mentioned work, taking into account the planned measures for the development of production, the general financial resources owned by the stockadorlik societies are determined, and then the resources directed to the targeted centralized funds funds, as a rule, are approved by the legislation. The financing of the measures will not depend on the progress of the implementation of the state budgets on some of their sources of income, since the funds are formed on the account of the entire sum of budgetary revenues.

This means that through the formation and use of centralized monetary funds, the active role of the state in the management of financial relations on the basis of accepted social and economic programs is manifested, the impact on the economic foundations of society. This function is carried out through the active use of the financial system of the state. The involvement of part of the additional products in the budget in the form of money for the organization of the specified funds occurs through the conduct of a corresponding fiscal policy, which, as already mentioned above, is considered a component of the state economic policy.

Decentralized monetary funds are formed not on the account of the state budget revenues, in contrast to centralized funds, but on the account of special purpose allocations and allocations from the profit of the Sharesadorlik income of societies. For example, economic incentive funds (material incentive fund, socio-cultural and housing construction fund, production development fund, etc.) deductions from profit and loss, sale of exited property, depreciation deductions and other resources are accounted for.

Shares of decentralized fundsadorlik the dependence of societies on the final results of their production-financial activities is a characteristic of them.

Sharesadorlik funds of monetary assets, formed under the jurisdiction of societies aktsiy sharesadorlik represent decentralized funds in all cases, regardless of their subordination to societies. Part of the funds may be re-allocated in accordance with the specified procedure and at the disposal of ministries and departments for the creation of such funds in them. This does not change their economic nature, and although other shares in the networkadorlik can be spent on the extended reproduction needs of societies, they also become decentralized funds.

In conclusion, the economic relations associated with the organization and use of centralized and decentralized monetary funds reveal the meaning and essence of finance, its internal derivative. The economic relations that arise in the process of formation of the specified funds are primarily intended to provide monetary returns and funds to the state and the stockadorlik to the societies, in the second place, the extended reproduction and the establishment of the appropriate monetary funds necessary to meet the growing needs of the community, since it is not yet possible to

The organization of decentralized and decentralized monetary funds takes place in the interests of all participants in the production process, that is, the state and the public, in the process of profit (income) taqsimlash and re taqsimlash. This means that the distribution relationship, which has a place in the formation and use of monetary funds, ensures the satisfaction of the economic interests of the participants of the sharesadorlik societies.

Simultaneously, the organization and use of centralized monetary funds in the state economy ensures the satisfaction of the economic interests of all members of the society, taking into account the level of development achieved by the social product and national income. Decentralized monetary funds serve as a source of satisfaction of the economic interests of the stockadorlik societies, which are organized under their control.

The practice of maintaining a market economy shows that with every serious change in the development of the productive forces, at the same time, the entire system of production, and sometimes even the improvement of financial relations, took place. The stock related to the organization and use of fundsadorlik financial relations of societies are also amended. The need for the creation of new funds, in which there was no need to organize certain monetary funds, the formation and conditions of use of other funds were determined, was born. In the conditions of market Relations, Finance has actively influenced this process at every new stage of the transition to market relations, providing conditions for the most complete satisfaction of the economic interests of the members of the AJ, linking the interests of some individuals and production communities with the interests of the whole society. The whole process of further improvement of distribution relations, creation and use of centralized and decentralized monetary funds in the Society of the stockadorlik is subject to the achievement of this goal.

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INFORMATION PROPAGAND IN THE PRESS OF KARAKALPAKSTAN IN THE 1930s

Abstract: *The periodic press of Karakalpakstan began to form in the early 1920s. In 1924, the first newspaper appeared in the Karakalpak language. In the 1930s, a 4 of republican and a network of district newspapers took shape in the republic, the vast majority of which were published in Karakalpak. At the same time, there was a policy of eliminating illiteracy, and interest in newspaper and book products increased significantly. During this period, the press of Karakalpak became one of the most important elements of state propaganda. The actively advancing idea of "romanization" and training in Latin graphics led to the growth of the reading audience, which was also used in the propaganda model of the regional Soviet-party apparatus. Propaganda actively promoted new social attitudes and values in the masses and led to the transformation of value orientation, public relations and the traditional structure of Karakalpak society.*

Key words: *traditions, newspapers, society.*
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ИНФОРМАЦИОННАЯ ПРОПАГАНДА В ПРЕССЕ КАРАКАЛПАКСТАНА 1930-Х ГОДОВ

Аннотация: *Периодическая печать Каракалпакстана стала формироваться еще в начале 1920-х годов. В 1924 году появилась первая газета на каракалпакском языке. В 1930-х годах в республике оформились 4 республиканских и сеть районных газет, подавляющее большинство из которых выходили на каракалпакском языке. Одновременно шла политика ликвидации безграмотности, значительно повысился интерес к газетной и книжной продукции. В этот период пресса Каракалпакстана стала одной из важнейших элементов государственной пропаганды. Активно продвигавшаяся идея «латинизации» и обучения латинской графике привели росту читающей аудитории, что также использовался в пропагандистской модели областного советско-партийного аппарата. Пропаганда активно продвигала в массы новые социальные установки и ценности и привела к трансформации ценностных ориентации, общественных связей и традиционной структуры каракалпакского общества.*

Ключевые слова: *традиции, газеты, общество.*

Введение

Традиционные ценности и социальная структура каракалпакского общества оставались вне влияния советской идеологии до середины 1920-х годов. В регионе все еще была сильна позиция традиционализма с его патриархальными устоями, ценностями и социальными установками. Национально-государственное размежевание в Средней Азии и образование национальных республик в 1925 году имело решающее влияние на трансформационные процессы, в том числе каракалпакского общества. Огромную роль в этом сыграли средства агитации и пропаганды, к каковым относится и периодическая печать.

Материалы и методы.

Периодическая печать Каракалпакстана, как и вся сеть массовых коммуникаций, начала формироваться с середины 1920-х годов. Первой газетой на каракалпакском языке была «Еркин каракалпак», которая выходила с декабря 1924 года и до начала 1930-х годов. Она являлась единственным периодическим изданием на каракалпакском языке. В 1930 году «Еркин қарақалпақ» была переименована «Мийнеткеш қарақалпақ» (с 1931 года - «Қызыл Қарақалпақстан»), начали издаваться газета «Советская Каракалпакия» и журнал «Қызыл Қарақалпақстан», через год - газета «Қарақалпақстан комсомоллары» («Жас ленинши»), а с 1932 года - журнал «Мийнет әдебияты». В 1933 году в республике издавались 6 газет, а к 1936 году их количество достигло уже 10: 5 республиканских («Қызыл Қарақалпақстан», «Советская Каракалпакия», «Жас ленинши», «Совет муғаллими», «Жеткиншек») и 5 районных («Колхоз күши» (Чимбай), «Балықшы» (Муйнак), «Социаллық курылыс» (Нукус), «Социализм жолы» (Кипчак), «Шопандар үни» (Тамды)), также журналы «Жеңис хаўазы», «Коммунист Каракалпакии».

Основными методами исследования явились методы историко-ретроспективного анализа, проблемно-тематический и междисциплинарный подходы.

Проблемно-тематический подход позволяет выделить общественно значимую проблему, которая отслеживалась в ряде изданий за определенный временной отрезок. Одним из наиболее востребованных в ходе исследования оказался сравнительно-исторический метод, применявшийся для сопоставления однотемных материалов и выявления динамики изменений, происходивших в социально-экономической и культурной жизни провинции. Междисциплинарный подход позволяет использовать весь спектр методов исследования гуманитарных наук, позволяющие рассмотреть совокупность взаимосвязанных и взаимодействующих объектов с учетом широкого исторического контекста, многообразия социально-политических структур и экономических институтов.

Результаты и обсуждение.

Издание газеты на местном языке было инициировано Ревкомом области в ноябре-декабре 1924 года и этот процесс проходил в очень сложных условиях: с 1924 года по 1927 годы газета выходила нерегулярно, несколько раз сменялись редакторы газеты, содержание публикаций было крайне скудным [1]. Несмотря на всемерную поддержку и государственное субсидирование, газета не имела своего лица, сложно было установить «тип газеты, отсюда неопределенность и случайность в содержании, подборе материалов, недоступность языка, слабое освещение основных задач и практических мероприятий партий и советской власти в КАО и т.д.» [2]. Материально-техническая база также была слабой, которая не позволяла стать полноценной периодикой: в 1924-1927 годы «Еркин қарақалпақ» выходила всего 67 раз, так как не по назначению были использованы выделенные на организацию газеты и переоборудование типографии средства [3]. Со своими сложностями сталкивались и другие областные издания: один раз в две недели выходившая на русском языке газета «Безбожник», сеть стенных газет при областных госучреждениях. Правда, на тот момент они не имели определенного влияния на общественное мнение, так как выходили в основном в городе Турткуле, были ограничены как в тираже, так и в охвате аудитории. В сентябре 1927 года ответственным секретарем Каракалпакского обкома назначается П.Варламов [4], который стал основным проводником партийных задач и принципов советской власти в области. Сразу же началась проверка всех областного и местного госаппарата и учреждений, в том числе издательской сферы. В директивах обкома особо отмечалась роль печати в идеологическом обеспечении политических и социально-экономических мероприятий советской власти в Каракалпакстане. Основными направлениями были указаны усиление клубно-библиотечной работы, самообразование местного актива и антирелигиозная пропаганда в ауле и кишлаке [5].

В начале 1930-х годов, с усилением классовой борьбы в обществе и форсирования политико-экономических акций государства, внимание в прессе усилилась еще больше. Перед прессой ставилась задача осуществления информационно-идеологической поддержки, широко освещая мероприятия партии и государства, осуществление агитационно-пропагандистской работы, обеспечивающей лояльное общественное мнение в настоящем и формирование новых общественных отношений, социальных установок и ценностей.

Работа в этом направлении была начата с дальнейшего укрепления материально-технической базы и установления партийного контроля над издательским делом. Партийный контроль над издательским делом и периодической печатью осуществлял сектор печати Каракалпакского обкома партии. Данный отдел курировал областной ЛИТО (Литературно-издательский отдел Наркомата просвещения). Данное учреждение подчинялось Государственному издательству при Наркомпросе РСФСР, образованного еще в 1919 году в Москве.

В 1922 году оно было преобразовано в Главное управление по делам литературы и издательств (Главлит), которое и осуществляло контроль над всеми печатными изданиями. После вхождения ККАССР в состав РСФСР облЛИТО как структурное подразделение Главлита осуществлял своего рода цензуру в издательском деле в Каракалпакстане, и согласно инструкции, ККГИЗ каждый раз обязана была получать разрешение на все издаваемые газеты, брошюры и др. издания [6].

Переломным в деле информационно-пропагандистского сопровождения политических кампаний советской власти периодической печатью Каракалпакстана можно назвать 1934 год, когда завершается кадровое оформление редакции, формируется устойчивая сеть рабоче-сельских корреспондентов (рабселькоров). На этом этапе перед прессой Каракалпакстана была поставлена определенная задача: «систематически освещать все факты извращений генеральной линии партии, беспощадно вскрывать и бичевать оппортунизм во всех его видах, мобилизовать широкие массы на выполнение очередных задач, поставленных партией и правительством» [7]. Основной темой была борьба с «жат жамай»: если в 1920-х годах к «жат жамай» (чуждый элемент) обычно относили всю бывшую знать, а также торговцев, ремесленников и дехкан, использовавшие наемный труд, знахарей и баксы [8], то в середине 1930-х годов рамки «жат жамай» значительно расширились,: к ним стали причислять и представителей внутрипартийных уклонов и групп («правый и левый уклон», «троцкист», «шовинист», «националист» и т.д.), детей зажиточных в прошлом слоев и духовенства, а также тунеядцев, пьяниц и других лиц девиантного поведения.

Тон в этом деле задавала русскоязычная газета «Советская Каракалпакия», которая активно использовала экспрессивную лексику и вербальную экзекуцию. Например, через прессу идет активный поиск членов оппортунистических уклонов и группировок в Каракалпакстане. К ним могли отнести и тех, кто в начале 1930-х годов выступали за ослабление гонений байско-кулацких элементов («группа 4-х», «группа 10-и»). Например, в составе «группы 4-х» был К.Авезов, являвшийся постоянным представителем ККАССР в Москве, затем председателем СНК республики. После «выявления» «группы 4-х» его подвергают «чистке», обвиняют в сокрытии социального происхождения и в пособничестве байским элементам. К.Авезов, как и другие участники т.н. «группы 4-х», обратился в Республиканскую комиссию по «чистке» каракалпакской партийной организации с заявлением о признании своих прошлых ошибок. В конце 1934 года «Советская Каракалпакия» выделила целую страницу на «Заявление тов. Авезова – бывшего председателя СНК ККАССР председателю республиканской комиссии по чистке каракалпакской парторганизаций тов. Зайцеву» и постановление данной комиссии «О чистке тов. Авезова – бывшего председателя СНК ККАССР» от 31 декабря 1934 года. Комиссия обвинила К.Авезова в участии в буржуазных националистических группировках в 1925 году и «группе 4-х», оппортунизме и либеральном отношении к кулакам, нерешительности и двурушничестве в разрешении вопросов хозяйственно-политического строительства в республике. Особым пунктом был выделен вопрос о его поддержке опального поэта-просветителя и драматурга С.Маджитова. В своем заявлении К.Авезов признает свои ошибки, что эти признания авторитетного и уважаемого всеми человека, стоявшего у истоков образования каракалпакской советской государственности, имел наибольший эффект в воздействии на массовое сознание.

Если содержание и характер публикаций газеты «Еркин қарақалпақ» 1920-х годов имело больше информативно-просветительскую направленность, то с середины 1930-х годов посредством местной прессы усиливается влияние партийных идеологем и установок на общественное мнение. Классовая сущность материалов передавалась такими методами, как противопоставление и игнорирование всего «не советского». Социальные установки и идеологемы советской власти преподносились наиболее прогрессивными. На страницах двух центральных республиканских изданий – «Қызыл Қарақалпақстан» и «Советская Каракалпакия» - идет активное противопоставление богатых и бедных, старого и нового, коллективного и индивидуального. Целые страницы были заполнены сообщениями с мест с повторяющимися сюжетами, публиковавшиеся как обычно под псевдонимами. В них, больше напоминающие доносы, указывались на принадлежность того или иного к «жат жамай» или на их связи с так называемым активом аула и кишлака. Увлечение редакций республиканских газет, особенно «Советской Каракалпакии», стало даже объектом специального постановления Каракалпакского обкома, где указывалось, что «в газетах до сих пор нет плановости в подаче материалов, в результате чего в печать попадают иногда случайные, непроверенные заметки» [9].

Пристальное внимание к фигуре «жат жамай» преследовало цель постепенного формирования в общественном сознании образа противника, которые являл бы собой источника всех бед и неудач политики властей. На страницах газет была организована целенаправленная травля лиц, кто относился в прошлом к «жат жамай», а также тех. кто так или иначе соприкасался с ними. При этом каждое подобное сообщение изучалось советско-партийными органами, затем направлялось в республиканские и районные комиссии по чистке, также следственным органам.

5 января 1935 года в местной прессе было опубликовано постановление пленума обкома партии «О предварительных итогах чистки партийной организации», где особое внимание уделяется «классово-чуждым элементам», которые проникли не только в члены колхозов, но и партии. Через несколько дней местная пресса перепечатывает передовую газеты «Правда» «Если враг не сдается – его уничтожают», призывающей к большей бдительности в отношении «явных и тайных врагов социализма». Непримиримость, борьба с инакомыслием, беспрекословное подчинение партийным установкам, не допускающее возражения или обсуждения – вот характерные социальные установки, пропагандируемые местной прессой середины 1930-х годов.

Параллельно шла борьба с основами традиционной структуры и социальных взаимоотношений внутри общества. Например, в 1935 году в одном из номеров «Советской Каракалпакии» вышел довольно огромный материал «Очистить каракалпакский язык от старых терминов», где некто К.Кулиев писал о том, что «в Каракалпакии еще до сих пор употребляются, даже коммунистами – терминология «яшуллы», «ақсақал», «аға», «мусылман»» и т.п. Эта терминология осталась как наследие старого ханско-феодального периода, которая совершенно не нужна для современной жизни нашему рабочему и колхознику-дехканину». При этом он утверждает, что «ақсақал» - это родоначальник какого-либо рода, или феодал, а термин «яшуллы» - старший, начальствующий, «понятие, оставшееся от феодального периода». Совершенно абсурдно понимание автором слова «аға», который автор переводит на русский как «господин». Слово «мусылман» он понимает как слово религиозное, «которое употребляется в отношении местного населения» - пишет автор.

С публикации передовицы газеты «Правда» «Об одной вредной концепции» в номере «Қызыл Қарақалпақстан» от 16 февраля 1936 года началась «подготовка умов» к политическим репрессиям 1937-1938 годов. По мере усиления репрессии в периодической печати увеличиваются материалы с ярко выраженной экспрессивной окраской. Например, в 1936-1938 годах в отношении «чуждых элементов» в прессе все чаще использовались термины «враг народа», «подлый вредитель», «гнилые либералы», «фашистские наймиты» и т.п., активно распространяя чувства ненависти и агрессии по отношению к ним. «Сурово наказать врагов народа», «Расстрелять агентов гестапо», «Уничтожить презренных изменников» - вот неполный ряд названий публикаций в местной прессе.

В положительном аспекте деятельности прессы на процесс трансформации поведенческих норм и общественных установок можно охарактеризовать освещение ею случаев выдачи несовершеннолетних девочек замуж, калыма, борьбы за женское равноправие и пропаганды всеобщей грамотности и квалифицированного медицинского обслуживания, культурного развития. Эта деятельность тесно связывалась с борьбой против духовенства, религиозных обрядов и суеверий. Сообщения с мест указывали на случаи выданья за калым несовершеннолетних девочек, бесправие женщин, обращение к таубам и порханам за лечением. За всеми этими действами советская власть видела происки идеологического врага – религиозных деятелей.

Тема антирелигиозной пропаганды в прессе активно муссируется в конце 1930-х годов, теперь уже и на обыденном уровне. Если до середины 1930-х годов духовенство в большинстве случаев действительно вело контрпропаганду, пользуясь авторитетом среди масс и сложной социально-экономической ситуацией, пытаясь сохранить свое влияние на общественные процессы, то после физического уничтожения активной части духовенства в 1930 году, имевшее продолжение в 1937 году, привели к полной его ликвидации как сословия. Однако, пресса как новый вид распространения информации в патриархальном каракалпакском обществе с его глубоко укорененными религиозными догмами, использовала широкие информационно-пропагандистские возможности в попытках «оповседневить» новые социальные ценности и репрезентаций. В 1939-1940-х годах через прессу идет борьба за вытеснение религиозных норм, обычаев и обрядов, традиционных социальных установок в обыденной сфере. 14 июля 1939 года Каракалпакский обком ВКП(б) Узбекистана принимает постановление «Об усилении антирелигиозной пропаганды», где речь идет о антирелигиозной работе среди населения. Например, «Совет Қарақалпақстаны» писала, что среди народа все еще есть муллы и ишаны - носители религиозных представлений, «осуществляющие контрпропаганду, а также население, посещающее «святые места». «Однако местный актив не сумел организовать массовую антирелигиозную пропаганду, - далее указывается в статье, - даже некоторые «активисты», считающиеся коммунистами, на деле бояться идти против религии» [10].

В конце 1930-х годов борьба с религией перешла на самую повседневность: против «зиятратов в святые места» (посещение могил предков и святых), против массовых погребальных действий и ритуалов семейного цикла («жаназа», «кудай жолына садақа тарқатыў», «сүндет қылыў»), норм шариата и адата, религиозных обрядов (ораза), праздников (Ораза-ҳайит, Қурбан-ҳайит), «которые служили только эксплуататорам, в пользу врагов народа» [11]. По публикациям и материалам печати, эта борьба была не только против повседневных религиозных норм, обычаев и обрядов, но и против самой сущности религии как идеологии. В этом контексте исламской религии противопоставлялась новая идеология – коммунистическая, с его классовым подходом и диктатурой трудящихся, которая могла быть осуществлена при высоком уровне политической сознательности масс. Этот вопрос в периодике выдвигается как альтернатива религии с начала 1940 года [18], хотя некоторые аспекты поднимались до этого в рамках требований массового изучения активом «Краткого курса истории ВКП(б)».

Выводы.

Пропаганда идеологем советской власти в печати обусловила возникновение довольно сложной системы взаимоотношений в каракалпакском обществе с его родственно-племенными разветвлениями, ведь в отношении соплеменников и вообще в целом у местного населения на обыденном уровне заклятого классового противостояния никогда не было. Проводившаяся политика репрессии внесло в общество большой разброд в общественном сознании: в это смутное время притупились присущие нашим народам чувства сострадания и милосердия, дружелюбия и братства. Люди боялись выражать эти свои чувства, избегали его открытого проявления. Как показало практика, сильно укоренившиеся патриархальные социальные устои и нормы поведения, сохранившиеся родственно-племенные отношения в корне своем оставались незыблемыми, тем не менее, большой «разброд в умах» в 1930-х годах привел к трансформации общественных связей, приведшей к кризису духовной сферы в последующем.

Рекомендации.

Возникновение и развитие газетного дела в Каракалпакстане позволило усилить информационную пропаганду, а содействие государства в этом вопросе - значительно расширить читающую аудиторию, активно влияя на информационное поле и повседневность. Она превращается в один из главных инструментов агитационно-пропагандистских кампаний и важнейшим средством воздействия на традиционное общество и его социальные установки. Основными приемами этого процесса стали частота использования экспрессивной лексики с новыми идеологемами, социальными установками и общественными ценностями, что привело к трансформации традиционных основ и формированию новой, противоречивой системы общественных связей.

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THE ISSUE OF PROBLEM TRANSLATING ENGLISH BANKING TERMS INTO UZBEK IN LINGUISTICS

***Abstract**: This article examines the problem of translating English banking terms in order to create a pragmatically adequate text, defines the classification and structure of banking terms, and highlights the distinctive features of translation of banking terms. It is concluded that the differences in the lexical composition and morphosyntactic structure of terms in English and Uzbek do not allow translation without discrepancies in the above structure of the source and target languages, which, however, does not prevent the transfer of the meaning of the term and, ultimately, the adequacy translation of the source text.*

***Key words**: banking terminology, financial terminology, cross-sectoral meaning, real meaning, linguistic units, bank transfer, bank specialists,translation techniques.*

***Language**: English*

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Introduction

In modern conditions it is almost impossible to deny the fact of computerization of various fields of knowledge. Therefore, each computer user, and especially bank specialists, needs to familiarize himself with the concepts that arise in the interaction of information technology with other branches of technology and science. In this case, it is important to know the use of computer terms and the peculiarities of their translation from English into Uzbek.

The problem of translating computer terminology is extremely important. During practical classes in a foreign language, students have the opportunity to work with technical texts that are rich in banking terminology. Inconsistencies in the translation of terms or errors can cause misunderstandings between specialists and, in general, affect the final result.

The translation of banking terminology itself requires students to have relevant knowledge in this area, as well as an understanding of English terms and knowledge of Uzbek terminology. When translating technical texts, the interaction of the term with the context is of great importance, due to which the meaning of the word is determined.

It is worth noting that many English terms no longer need translation, because they have received a universal meaning (for example, disk, file, program). There are also many borrowings: Windows, e-mail, host, as well as "false friends of the translator", for example data, image, rating.

There were big problems in the translation of economic texts, in particular, banking, which in large volumes poured into Uzbekistan from abroad. This material, of course, was of great interest for studying it by both linguists and practitioners. Ryabova M.E, for example, claims that “today the translator must often clarify the details of the communication process related to the professional sphere of the material being translated, thereby expanding his intellectual level” [1]. The tendency towards a rigid separation of the term from other linguistic units and towards the allocation of special closed systems in which the terms function, affected the correlation of the concepts of “terminology” and “term-system”. The terminology is often understood as "a set of words and phrases denoting special scientific and technical concepts and serving for communication in this area", and under the terminological system - "an ordered set of terms with fixed relationships between them", i.e. codified and unified terminology. Collections of terms can be formed spontaneously or deliberately. Following V.M. Leichikom [2], A.V. We call Superanskaya [3] a terminology, and a consciously formed one - a terminology system.

The emergence of a new term is due, in their opinion, such factors as the choice from a variety of already existing linguistic units included in other terminological systems, or the creation of a relatively new designation based on already existing words or phrases.

If we talk about the terminology system in the field of economics, then it was formed and continues to be replenished, first of all, due to the inclusion of phrases and phrases in it, a component of which are common words. One-word special terms that have international or cross-sectoral meaning and are not found in everyday speech are less common, as are special terms that function only within a specific terminology system (for example, public offering - public release of a stock, balance sheet profit - balance sheet profit).

If we talk about the structural composition of terms (namely, the ratio of one-word, two-word and multicomponent terms), then according to L.V. Ivina [6], two-term terms dominate (54%), which are formed according to the following models:

- N + N (bank transfer - bank transfer);
- A + N (double taxation - double taxation);
- V + ed + N (fixed advance - urgent loan);
- N + of + N (currency of credit - loan currency);
- N's + N (shareholder's equity).

One-word terms (21%) rank second in terms of their prevalence. For example, bill is a bill of exchange, credit is a loan, fine is a fine.

Three-word terms (16%) are the smallest: loan amortization schedule - a schedule of gradual loan repayment, indirect mortgage loan - a collateralized loan, term of payment - loan maturity.

Ivina L.V. [6] relates the following methods to the main methods of forming the financial terminology system:

- *semantic* (for the commonly used word hurdle, the main meaning is "bar", and in the financial sphere - the agreed percentage in excess of the invested funds after the end of the project);

- *syntactic* (letters of credit - letters of credit, fixed rate of exchange - fixed exchange rate);

- *morphological* (due to prefixing: co-owner - co-owner, insolvency - insolvency, maturity - payment term);

- *morphological and syntactic*

(according to the abbr + N model: SWOT (strengths, weaknesses, opportunities and threats) analysis - swot analysis, i.e. analysis of the strengths and weaknesses in the company's activities, its opportunities and threats with which there is a possibility of collision ; ATM network .

In the financial terminology system, you can also find those terms that are words borrowed from other languages: Outright (English out-right - normal, direct) - forward exchange transaction, including a premium or discount [7].

Banking and financial terms are synonymous. A term can have one or more general linguistic meanings, which in specific cases makes it difficult to adequately translate terms into another language without distorting the meaning of words. In such cases, the translator needs to rely on the context, since it is he who actualizes the meaning of the polysemous term. For example, the term "lame duck" is ambiguous: bankrupt, poor fellow, loser, unfortunate, cripple, bankrupt broker, non-reelected member; and only the context chooses the specific meaning of the term.

The study of banking terminology suggests that it is metaphorical. Metaphors make it possible to "express difficult to express and to designate what there is no direct designation for " [8]. A metaphor contains such an amount of information that allows it to perform the functions of a term.

For example, the term "*venture financing*" is a metaphor for the relationship between an investor and an entrepreneur. The real meaning of these financial-industrial relations, expressed metaphorically, implies that partners, having no guarantees and knowing about the uncertainty and unpredictability of the venture business, nevertheless expect high profits. Another example of a metaphor in banking terminology are the concepts of "management charge" and "management fee", which refer to drafts (any written order to pay a specified amount, for example, a bill of exchange) for company management.

Due to the complex and multifaceted nature of the formation of terms, their synonymy, difficulties arise in their translation. If the task of translation is to ensure equivalence as a community of the content of the original text and the translation text, then when translating special, in particular, financial texts, the terms should be given special attention, because it is they who determine the information content of the special text, which organizes and structures the special information. Consequently, the issue of achieving equivalence of the final text to the original text is to a large extent related to the translation of terms.

Almost all linguists agree that "the absolute identity of the codes is contrary to the nature of the language" [2]. The possibility of absolutely complete and accurate transmission of the original content when translating financial and economic texts is limited, first of all, due to differences in language systems, different traditions of the nomination of concepts that have developed in each of the languages. In general, a translator uses two ways of translation: direct translation, or literal translation, and indirect translation (indirect). Indeed, there may be a case where a message in the source language is perfectly translated into a message in the target language, since it is based either on parallel categories or on parallel concepts. But it can also happen that the translator defines a "gap" in the target language, which must be filled with equivalent means to achieve the same impression from two messages.

Table 1.

CATEGORY	TYPE
Formal Structure	1) Terms-words (asset / asset, holding, etc.); 2) Terms-phrases (loan value / loan amount, etc.)
Semantic Structure	1) Unambiguous terms (lazy capital / free funds, etc.); 2) Multiple terms (placement / placement of capital, etc.)
Content Structure	1) Terms-objects (reverse mortgage / reverse mortgage, etc.); 2) Terms-processes ("pyramiding" / construction of a pyramid, etc.) 3) Terms-signs (rich / overpriced, etc.); 4) Terms- values (rubel / national unit of Belarus, etc.)
Spawn Source	1) Primordial (trade / trade, etc.); 2) borrowed (tariff / tariff, etc.); 3) international (investment / investment, etc.); 4) hybrid (breakpoint sale / sale over the agreed loan, etc.)
Morphemic Structure	1) simple (bill / bill of exchange, etc.); 2) Comprehensive (goodwill / business reputation, etc.); 3) Derivatives (protectionism / protectionism, etc.); 4) Abbreviations (EPS / earnings per share, etc.); 5) numerical expression (50 percent / 50% of the company's shares, etc.)
Grammatical Structure	1) Noun terms (payroll / payroll, etc.); 2) Verb terms (to onsell / resell a security or other asset, etc.); 3) Adjective terms (provident / thrifty, economical, etc.) ; 4) terms-adverbs (on application / on demand, etc.); 5) terms-participles of the 1st, 2nd types (galloping / galloping, mixed / mixed, etc.)

In addition, it should be noted that some stylistic effects cannot be conveyed in the target language without changing to one degree or another the order of the elements or even lexical units. This is especially true when there is a discrepancy in the lexical composition and morphosyntactic structure of terms when translating from one language to another.

Differences in the grammatical structure of the language are the main reason for discrepancies in the morphosyntactic structure of English terms consisting of two or more nouns, and their Russian equivalents. The grammatical structure "noun + noun" (N + N), which is most productive when translating English terms, is, as a rule, the construction "adjective + noun" (Adj + N): I am interested in consumer loan (consumer loan) [4].

The discrepancy between the grammatical forms of one of the components of the compared terms FL and PL is observed when translating English terms formed by a combination of nouns. For example, when comparing terms consisting of two nouns (N + N) or a noun and a noun phrase, the following types of discrepancies are observed:

1) changing the case form of the defining noun (replacing the common case with the genitive form): Mortgage term is from 12 to 360 months, that is from 1 to 30 years (loan term) [4];

2) changing the case form of the defining noun (the general case of the noun in the structure of the term IL is the indirect cases of the noun in the structure of the term TL) and the introduction of the preposition: Carefully considering your loan application the bank presents you the new conditions (loan application) [4] ;

3) a change in the number (singular - plural) simultaneously with a change in the case form (including the introduction of a preposition): share turnover (stock turnover); financial risk management [9].

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WORTHY ALLY OF GREAT SABIR

***Abstract**: It is known that the literary school of Sabir mainly experienced its highest period of ten years from 1906 to 1916, and the most talented followers of this school were brought up. The followers of this school were happy to communicate with such a great artist as Sabir, learn from him and benefit from him, which was also the lot of Ali Nazmi.*

***Key words**: Sabir literary school, literary school «Molla Nasraddin», Jalil Mammadguluzade, Ali Nazmi, MA Sabir «Temeyi-nahar», «Gulibiyabani», «Brother is riding a horse on the river», Zangezur, national unity, satirical a type.*

***Language**: English*

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Introduction

Jalil Mammadguluzade explained in detail Ali Nazmi's discovery of the "secret key" to the "spell of art" of Sabir's poetry; After recounting the story of Sabir's satire "Tömei-nahar", noting that the satire was written about the lack of grain and the terrible famine in Zangezur at the time, he continued:

“In the first and second years of the publication of our magazine, there was a great famine in Zangezur ...

Then we published in the 12th issue of our magazine a solemn address to rich people with the article "Gulibiyabani". After a while we heard Sabir's "Temei-nahar". Mashadi Sidimgulu Kefsiz also appeared here and said "Panah Allah" and sent a poem with the motto "My brother is running along the river, do not cry, look at the whites" in response to Sabir's "Temei-nahar". (J. Mammadguluzade. Specified work. P.71).

Thus, Ali Nazmi learned the secrets of the art of poetry by M.A. Sabir, who the magazine "Molla Nasreddin" wanted to see and distribute, or rather caught the rhythm of the creative style:

It should be noted that the satire of Sabir "Tomei-nahar" was published in the magazine "Molla Nasreddin" with the secret satirical signature "Chaida chapan", which means riding along the river. Therefore, Ali Nazmi wrote his response satire calling on its author Sabir, who actually used the signature he used in his satire. Mirza Jalil in his article described that the arrival of the poet (Ali Nazmi) in the field of satirical poetry by Moll Nasraddin was not easy, it was associated with intense spiritual searches and upheavals:

The first person in our collection to talk about Mashadi Sidimgulu was "Temei-nahar". It should also be noted that several months passed between this work of Sabir and the answer to it by Mashadi Sidimgulu (the satire of MA Sabir "Tömeyi-nahar" was published in the magazine "Molla Nasreddin" on April 14, 1907. 17 In response, he wrote "My brother who runs along the river "... and came out of the 38th issue of October 8, 1907. - AF), and during this period Sabir's works on various topics were published. So, M. Sidimgulu, - said M. Sidimgulu, who, according to him, had never read a single issue of "Molla Nasreddin" from beginning to end, was not touched by the more valuable insinuation of Sabir - until "Temei-nahara" it is my responsibility to respond in a few months. " (Jalil Mammadguluzade. Works in volume 6. B., 1985, p. 71).

Here Jalil Mammadguluzade drew attention to the complex creative psychology of the creative imagination of a literary personality. In activating the potential power of Ali Nazmi's poetic imagination, he saw the secret of such creative imagination that not only other satires of Sabir, but also his work "Temei Nahar" appeared several months later. The outstanding writer (Jalil Mammadguluzade) correctly emphasized that Sabir is close to the spirit of revolutionary satire, the poet Ali Nazmi, who can enter his poetic galaxy.

We read about it:

“We can say with confidence that in the world of Molla Nasreddin, by the humor and salinity of the dialect befitting Molla Nasreddin, by skill and charm, the first Mashadi Sidimgulu, who fell in love with Sabir and replaced him, was the first Meshedi Sizhimgulu Kefsiz ...”

... And even after that, having looked at the signature on the literature sent to our office by Mashadi Sidimgulu, we realized that it was not Sabir who wrote it. " (Again there. P.72).

All these and other virtues testify to the strength of Ali Nazmi's talent, his creative potential and the boundlessness of his poetic talent. In his response satire, written by Sabiru, as if trying to get rid of the language of those who were satirically exposed in "Temei-nahar":

Brother, racing down the river
Don't cry, look positively
Think a little dear
People, ask the deaf.
I don't know until the end
One lamb for us
Let's not hide at home
On the plains that do not overlook.
My father,
Who was drinking?
Once you understand this,
Look at the sign that is written.

Ali Nazmi condemns his main colleague "Chaida Chapan" for interfering in everything, without looking at anything, criticizing the rich for their remoteness from the problems of people and the village. At every step he criticizes them for their civic position, saying: "Look at the poem that he wrote because of this (speech, words - AF)." The satirical type dares to comment on facts that he considers appropriate in his world in order to "purify himself, focus his mind on the one galloping on the river":

Just look at Zangezur,
Look where you are
Lots of bread, no price
Why are you sad?
Everyone cries in vain
Don't worry, you're here.
You are tuned in to Yevlakh.
Look at the vargons there.

According to the object of criticism, it seems that the Zangezur people starving there have nothing to do with them. The Zangezur people were alarmed by this tragedy. There is nothing wrong with mullahs, intellectuals or the rich. So here's the best:

Be reasonable
Have mercy, be honest.
Confess
Look at the butter pilaf.
... I don't know what the idea is
To her, riding down the river
Should we go bankrupt too?
Should we grieve?
Then they will tell us:
Here's another straw for you.
No baby thank goodness
Forgive me, turn to the enemy.

Apparently, Ali Nazmi, in the language of a satirist, calls on the shepherd to focus on the river, take care of his life, regulate his expenses and not spoil the “fat pilaf”. In a fit of anger, he turned his back on her because he wanted them to go bankrupt. Instead of working for the nation, they try to justify the fact that their compatriots do not improve their living conditions, do not fill their pockets, do not look down on the simple, poor and do not like to greet them.

Thus, Ali Nazmi also figuratively states that actions of a satirical type entirely consist of betrayal of the nation and people. At the same time, he expresses full solidarity and support to the poet's colleague. Observations and research show that not only in this satire, but throughout his career, he stood on the social and civil position of his teacher Sabir, was an active, creative representative of the literary school "Molla Nasreddin" and managed to preserve his poetic identity and freedom. A talented literary critic, the late professor Jafar Khandan Hajiyev, also clearly identified this aspect. He defended Jalil Mammadguluzade's position and praised Ali Nazmi's work:

“... Ali Nazmi compares his satires with Sabir, uses them based on ideas, language, style and so on. However, despite these features, Ali Nazmi is not an epic poet. Although it looks like Sabir, it retains its originality and is therefore new. " (J. Hajiyev. History of Azerbaijani literature of the 20th century. (Textbook for universities). Publishing house of the Azerbaijan University. Baku, 1955, p. 336).

However, based on the comparison of Sabir's satire "One patience" with Ali Nazmi's poem "Istikhara", J. Hajiyev noted that at the first stage of his work Ali Nazmi imitated Sabir, but this is not typical. See: ibid, p. 336-337).

Indeed, if in his satire on "Prancing on the River" the poet only condemned his colleague, but actually expressed his support for him, then in the satire "Molla" Ali Nazmi generally stated that he supported the magazine "Molla Nasreddin", mollanasraddinstvo, and defends his social and civic position. ... This satire discusses the satirical type itself. He opposes the position of "Molla Nasruddin", defends criticism of the mullahs and considers the position of the magazine unfounded.

Indeed, if in his satire on "Prancing on the River" the poet only condemned his colleague, but actually expressed his support for him, then in the satire "Molla" Ali Nazmi generally stated that he supported the magazine "Molla Nasreddin", mollanasraddinstvo, and defends his social and civic position. This satire discusses the satirical type itself. He opposes the position of Molla Nasruddin, defends criticism of the mullahs and considers the magazine's position unreasonable.

Here "Molla Nasruddin" is criticized for being a supporter of innovation, progress and development. He followed the path of awakening people and explaining their rights to them. This, of course, does not satisfy the old people, old-timers and interferes with their judgment and watering the field at their will. Therefore, they recommend the malla-molla to Nasreddin to step aside and leave the area to them as before. If this happens, they provide the following information on what they will do if given the opportunity.

Draw yourself a dream
Let's settle this matter.
Let's all rise up.
The one who goes out,
Sheathed our swords.
As they have rusted for a hundred years,
Find, Mulla (p. 27)

In these lines, supporters of the outdated - supporters, that is, pro-antique types, and wild characters come to mind. As in the past, “those who want to get out of the womb, that is, those who can understand the truth, rubbed their eyes and yearned for the verse they had carved on their heads. The mullah is accused of violating all this "order":

... From what you said
And tired from the inside
Don't go there, here
To Aga ... an aristocrat, mullah.
She, a new Muslim,
Why are you interfering
Stuck in our throats
Giving us trouble
You are making fun of the Bek.

It seems that the old and the old are getting more and more angry, accusing the mullah, whom they disgustingly call the “new Muslim,” for taking the side of the poor, ignoring the clergy and the nobility, and speaking badly about them at every step. He says in a threatening tone that he threw religion and faith at him and violated the rules and regulations, opening the eyes of people who used to be "greedy Muslims" for him. He expressed dissatisfaction with the fact that newspaper and magazine readers were dizzy and mentally disturbed.

Let me die, you quit
Man, sect ... with religion
You made a provocation
blue-eyed Muslim.
For readers of the magazine,
There is no intellect, no brain.
Their minds are busy too
With this letter, this ink, Mulla. (Page 28)

Ali Nazmi notes that the satirical type is getting hotter and hotter, and appeals to others, pointing to other figures such as Molla Nasrudin who are open-minded, innovative and independent, and also try to attract them:

Now he's become a preacher for us
Nariman with a hat on his head.
Who is making fun of us?
This is Faik Ibn Neman.
What do I know, such and such
I'm grieving, mullah. (Page 28)

Apparently, the "journalistic" opposition to all kinds of moral obsolescence, backwardness, the identification of socio-psychological aspects that hinder the progress of people, and the raising of the question of removing these obstacles have violated the comfort of all who are interested in this backwardness. Ali Nazmi exposed these satirical types in a conversation with himself. The satire artistically reflects the object of criticism and exposure, ways of expressing protest and anger against supporters of innovation, progress and happiness, and before the eyes of the reader, an exhausted, bright and instructive scene comes to life. Professor Firidun Huseynov, of course, wrote taking into account these aspects of the poet's work:

“The satire of Ali Nazmi, which criticizes and exposes the current social structure, the ugliness of the environment, the royal tyranny, shows naturalness, smoothness, freshness, salinity. The main advantages of these works are truthfulness, openness, simplicity and clarity. These poems are touching, deadly, thought-provoking and memorable. Artificialness and fatigue, rhetoric and stupidity are alien to their common spirit. " (F. Huseynov "Molla Nasraddin" and Mollanasraddins. Baku, Writer, 1986, p. 195).

As mentioned above, poetic features in the work of Ali Nazmi are also visible features of the work of M.A. Sabir, but both poets expressed their thoughts in their own way.

Summary

The article reveals that one of the worthy successors of the literary school of Sabir Ali Nazmi found the "secret key" to Sabir's poetry, the "magic spell of art", and the satirical satire of Sabir "Tomei-nahar" was published in the magazine "Molla Nasreddin". It is said that the response satire was written by its author, Sabir, with reference to the signature he actually used in his satire.

Conclusion

The article also contains interesting views of the great Mirza Jalil on the personality and work of Ali Nazmi. Thus, in the activation of the potential power of the poetic imagination of Ali Nazmi, he saw the secret of such creative imagination not only in other satyrs of Sabir, but also in "Temei-nahar", which he was several months later. The outstanding writer (Jalil Mammadguluzade) rightly emphasized that it was Ali Nazmi, the poet, who was close to the revolutionary spirit of Sabir's satire and could enter his poetic galaxy.

The views of Professor Firidun Huseynov on the work of Ali Nazmi also had a significant impact on the content and scientific and literary value of the article. The main advantages of these works are truthfulness, openness, simplicity and clarity. These poems are touching, deadly, thought-provoking and memorable. Artificialness and fatigue, rhetoric and stupidity are alien to their common spirit. "

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	GIF (Australia) = 0.564	ESJI (KZ) = 8.997	IBI (India) = 4.260
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HEROES OF THE EASTERN SAGA «AYYAM AL-ARAB»

Abstract*: In the history of the world epics study, the Arab epics has long remained unexplored, and this was the reason that sometimes there impression of the absence of an epics among the Arabs. To date, epic patterns have been considered mainly as sources of interest only to historians and anthropologists. One of the unique examples of the early medieval epic stories of the Arabs is the tribal traditions, known in Arabic studies as "Ayyam al-Arab" ("Days of the Arabs"). This collection of oral and later written narratives is not only a unique historical monument, but also a valuable philological source in its broadest sense.*

This article is devoted to the study of the role and place of man in pre-Islamic society, his essence and dignity, positive and negative qualities, which have reflected in "Ayyam al-Arab.

For this purpose, the selection and analysis of tribal legends – "Days" was made, on the basis of which the main participants in historical events – epic heroes were identified, a classification of heroes was made, and the question of the prototype of literary heroes in Arabic literature and their influence on the formation of literary types at the subsequent stage of its development was based.

Key words*: saga, tribal traditions, epic stories, "Ayyam al-Arab", epic hero, personality, character of a hero, psychologism, prototype, literary type, personage, art portrait.*

Language*: English*

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Introduction

The historical traditions of the ancient Arabs have long been preserved in the oral tradition and handed down from generation to generation. And only at the end of the VIIIth, and beginning of the IXth centuries, Arab philologists began to collect them in special collections, one of which was called "Ayyam al-arab fi-l-jahiliyya" [2] ("Days of Arabs in Jahiliya[5]"). It is known that two collections "Ayyam al-Arab" were compiled by the Basri philologist Abu Ubayda Ma'mar ibn al-Musanna (728-825). The first contained 75 days", the second – 1200. Another fact is given that Abu-l-Faraj al-Isfahani compiled a collection in which he collected 1700 days. Unfortunately, none of these collections has survived, and they have come down to us in the interpretation of later authors [2, p. 6]. A collection of legends about the feats of the Arab tribes – a narrative with included poetic passages, is of particular interest as a literary source [3, p. 33-37; 12, p. 57-85]. "Days" bring us household material about moral and everyday norms of behavior, psychology of the pre-Islamic society [7, p. 9-10; 10, p. 7]. The value of the "Days" as a historical source is undeniable and is determined not by the number of names known in Arabic history and literature, but, first of all, by the genre features of the reflection of real life, spiritual and moral values. The ancient Arab listener would not be interested in the legend if he knew that his plot was fictitious, and his heroes never existed. The popularity of traditions containing the necessary share of reliability is connected with this, recognizing and experiencing which, the reader or listener could identify himself and his relatives with his heroes. In traditions, people who once lived in reality act, they act in real circumstances, in their homeland, at a certain time, which historicity cannot be denied. But most of all from the other genera of the epic, the Days are distinguished by their stylistics, visual means that are close to the novels, and the objectivity of the Days is also expressed in how the essence of a person, his advantages and disadvantages are revealed in them.

Researchers of Arabic literature of the early medieval period agree that descriptions of the inner world of a person, his feelings and experiences are not inherent in it, as the human person did not attract so much special attention to become an object of the image [12, p. 45-57]. And, the main thing for the literature of that period was the image not of people, but of events: conflicts, clashes, wars which were, vital for the tribes. And the man is depicted here as if from the outside, as the embodiment of only certain qualities, as is generally characteristic of epic creativity [14; 8; 4].

Analysis and research results.

So, the participants in the traditions of "Ayyam al-Arab" are kings, chiefs of the tribes, elders, soothsayers (kahins), poets, warriors, envoys of leaders, Bedouin women and just people from the tribe. Like all epic heroes, they are courageous, brave, noble and generous. Their main qualities, which emphasize and glorify the "Days", are bravery and courage. The kings or leaders of the tribe with their courage, generosity and nobility gain the respect of their relatives.

From the very first pages of the traditions one can find a description of a generous and forgiving (magnanimous) king:

فدخل هوزة عليه و قصَّ عليه أمرَ بني تميم و ما صنعوا، فدعا كسرى بكأْس من ذهب فسقاه فيها، و أعطاه إياها، و كساه قَباع ديباج منسوجاً بالذهب و اللؤلؤ، و قَلَنْسُوَةً قيمتها ثلاثون ألف درهم، و دعا بِعقْدٍ من درّ فعُقِدَ على رأسه...[2, p. 12]

Hawza came to him and spoke about the situation of the Tamim tribe and what they did. Then Khosrov asked for a golden cup, filled it with gold and gave it to Hawza, dressed him in a brocade dressing gown made of gold and pearls, and a headdress worth 30 thousand darhems, ordered to bring a necklace of pearls and tied it to his head... [13]

In the "Day of Zahru al-Dahna", the leader of the tribe is described as a brave and generous person:

كان أوسُ بن حارِثة لأم الطَّائي سيِّداً مُطاعاً في قومه، و جواداً مِقْدَاماً...[2, p. 109]

Aus ibn Harisa Lam at-Thai was a generous and courageous leader, and all his tribe obeyed him ...

Some of the narratives mention the high position and generosity of the leaders, as, for example, in the "Day of Man'ige":

كان زهيرُ بن جذيمة العبسي سيّد قَيْس عَيْلان، فتزوّج إِليه النعمان بن امرئ القيس ملك الحيرة لشرفه و سؤدده و أرسل إليه يوماً يَسْتَزِيرَه بعضَ أولاده، فأرسل إليه ابنَه شاساً – و كان أصغرَ ولده – فأكرمه و حَباه أَفْضَلَ الحَبْوَة مِسْكاً و كُسىً و قُطُفاً و طَنَافِس... [2, p. 183]

Zuhair ibn Jazima al-Absi was the leader of the Qais tribe, because of his fame and high position, king of Hira, Al-Numan Ibn Imruulqais, married his daughter. Once, Zuhair sent one of his sons – his youngest son Shas – to al-Nu'man, and he received him with honor and generously endowed with musk, elegant clothes, velvet robes and carpets ...

Tribal elders are most often heroes of venerable age who have received "battle training" in battles and wise experience. They are a kind of "advisers" to the tribe, to whom the tribe turns in a difficult moment for them. So, in the "Day of Kulab al-Sani" ("The second day of al-Kulab"), the elder of the tribe Aksam ibn Sayfi not only advises, but suggests a win-win strategy in the battle between the tribes:

و لمّا بلغ تميماً أن مذحجاً و أحلافَهم عازمون على غَزْوِهم فزِعوا إلى أكثم بن صيفي – و له يومئذٍ مائةٌ و تسعون سنة – فقالوا له: حقِّق لنا هذا الأمر، فإنّا قد رضيناك رئيساً. فقال لهم: «لا حاجة لي في الرِّياسة، و لكني أُشير عليكم»: لتنزلْ حَنْظلَة بالدَّهناء، و لتنزلْ سعد و الرِّباب بالكُلاب، فأيّ الطريقين أخذ القومُ كفى أحدُهما صاحبَه... [2, p. 268]

When the Tamimites found out that the Mazhiji tribe and its allies were going to raid them, they turned to Aksam ibn Sayfi – at that time he was one hundred and ninety years old – and told him: Judge us this matter, we are pleased that you are our leader. To which he replied to them: There is no need for me to be a leader, I will tell you: let Hanzala be in ad-Dahna, and Sa'ad and al-Ribab – in al-Kulaba, and any of the two roads will be taken by the tribe, it is enough to take possession of one of them ...

In another legend, "Day of Shi'b Jabal", an elder of the tribe, although in the past an experienced and decisive warrior, before giving advice, wants to listen to the opinion of each of his fellow tribesmen:

و لمّا سمعت بنو عامر بمسيرهم اجتمعوا إِلى الأحوص – و هو يومئذٍ شيخٌ كبير، قد وقع حاجِباه على عينيه، و قد ترك الغزو، غير أنه يدبِّرُ أمرَ الناس، و كان مجرِّباً حازماً ميمون النَّقِيبة؛ فأخبره الخبر، فقال لهم الأحوص: قد كبرتُ فما أستطيع أن أجيء بالحَزْم، و قد ذهب الرأيُ مني؛ و لكن إذا سمعتُ عرفت، فجْمِعوا آراءكم، ثم بِيتوا ليلتكم هذه، ثم اغْدُوا عليّ، فاعْرِضوا عليَّ آراءكم...[2, p. 268]

When the Banu Amir tribe heard about their advance, it gathered at al-Ahvas – at that time he was a deep old man, his eyebrows drooped over his eyes, and he no longer fought (raided) – nevertheless, he settled the affairs of people, was experienced, decisive, firm and calm; they told him the news, and he told them: I was already old, and I can't make a decision, the opinion has left me; however, if I hear (opinion), I admit (him), collect your opinions, then get enough sleep that night, come to me tomorrow and present me your opinions...

The main theme of the narratives is clashes and feuds, but, if you look at it, they are all conflicts between people that arose as a result of their interests and passions. In every conflict, clash, the essence, its true virtues and qualities, are manifested. All battles described in the "Days" are motivated by human characters and their interests. These motives were not always personal and individual: the human personality had not yet been isolated from the collective, tribe, and in its actions was guided by its principles. In the first place, a man of that time has concern for the good name of his tribe, for his honor and dignity. During the battle, the hero's courage, his strength and dexterity are demonstrated. This moment is dominant and determining in hero's life, and any tradition consists of these episodes. The hero of "Ayyam al-Arab", like all epic heroes, is not tormented by doubts and does not face the necessity of choice. He only fulfills what is destined for him by fate. At the same time, one cannot help but notice the presence of extreme opposites in it. He is brave and cruel to enemies, but loyal to his tribe and sentimental, if necessary, ready to sacrifice not only his good, but also the most precious that he has – his life.

In one of the legends, "Day of Az-Zurayn" a battle that was fought between Bakrites and Tamimites is depicted. Before the battle began, the Tamimites tightly bound the two camels, vowing not to back down until they came loose. Then one brave man of bakrit Umar ibn Qays knelt and said: "*I will be your camel, kill me and do not retreat until I retreat*". Encouraged by such an appeal, the Bakrites launched an offensive, in which they defeated the Tamimites. In another legend, "Day Akil", it is said that someone named Mus'ab ibn Abu Khair sacrificed his hand to avoid a clash between two tribes, one of which he belonged to.

Despite the fact that the heroes of the "Days", endowed with certain qualities, and stand out among their fellow tribesmen, they cannot yet be called literary types and characters, they are usually more vital and real. Their behavior and actions do not always steam from their characters. For example, in "Day Kulab al-Avval", it is told about the sons of al-Haris ibn Umar al-Maksur ibn Khujra, nicknamed Akil al-Murar, whose relations were upset after the death of his father. Between the two brothers Salama and Shurakhbil, a real feud began. Encouraged by King al-Munzir ibn Ma 'al-Sama', interested in their deaths, the brothers entered into war with each other. During the battle, Shurakhbil announced to his people: "*Whoever brings me the head of Salama will receive 100 camels*". Then Salama announced that he would give 100 camels for his brother's head. During a clash between brothers, Shurakhbil was killed. As a result, Salama, who himself provoked people to kill his brother, experiences pain and remorse. Or in another story – "Day of Rahrahan" – a warrior of noble birth Lakit ibn Zurara leaves his brother Ma'bad captured by the enemy tribe, refusing to pay a royal ransom for him. In captivity, his brother dies and, having learned about this, Lakit gathers an army to avenge his enemies for the death of Ma'bad.

At first glance, it seems that the description of such events is aimed at revealing the human person in all its complexity and inconsistency. However, at this stage in the development of narrative prose, an individual, as a person, has not yet attracted attention as an image object. Interest in a person's inner world, his deep feelings and feelings arises later, at the next stage of the development of the narrative genre, in Syrah (i.e. biographies). Such heroes of Syrah as Antara, Hamza are the result of generalization, the selection of common to many real persons. And here, the rejection of the image of an individual real person in all its individual complexity and originality is already noticeable, that is, there is a simplification, the so-called schematization [9, p. 115; 4, p. 62]. And in this regard, "Ayyam al-Arab" is more truthful than a Syrah, since the people described in them are depicted as if "inadvertently", only as participants in any events, and that is why their description is more realistic.

Almost every conflict or armed clash is associated with a description of the killings: "*Then, lulling his vigilance, the Bedouin fired an arrow at him, which, passing between the shoulder blades, pierced his heart. Then he let the horse trample Zayed until he died*" ("Zi Kar Day "). "*Once al-Haris went hunting and saw people from the Khumur al-Wahsh tribe. They grabbed him, one of them went to al-Haris and began to examine him, then swore that he would not take anything into his mouth until he eats his liver. The next three days they chased him on horses, then they caught him, fried him and ate his hot liver*". ("Day Kulab al-Avval"). Of course, from the point of view of modern man, such violence and murder amaze with its cruelty. But, condemning them, it should be remembered that most of these killings were committed out of a sense of duty – a duty of revenge for the murdered relative. After all, the society in which they lived did not yet know the police, prisons and other bodies responsible for fair punishment and retaliation. So, the fulfillment of the duty of revenge should have been mandatory, otherwise this society simply could not have survived.

The source of conflict between people in tradition is not only revenge for the killing. These include all actions that can be regarded as offensive and affecting the dignity of the Bedouin. So the encroachment on property, land, livestock, water sources is considered by the Bedouins not only as loss of property, but also as moral damage that the owner suffers in case of impunity for the abduction.

The "Day of al-Baradan" tells how Khujr al-Kindi once went on a raid on Bahrain. Upon learning of this, Ziyad ibn Habula seized the moment, attacked the sites of Khujra and seized his property and women. Returning from the campaign, Khujr immediately rushes in pursuit and conquers his property. In addition, the Bedouin is extremely sensitive to all manifestations of his attitude to him. An insignificant act, a rashly spoken word can cause his resentment and then, it requires satisfaction.

So in "Day of Tikhfa" it is said that in the kingdom of Khira, the position of "radif" corresponds to the position of Wazir (i.e. Minister). Radif was supposed to sit at the king's right hand at receptions, he rode behind him at the exits, and at feasts he could drink from the royal cup. In addition, he was entitled to a fourth of the king's booty from each campaign and tribute from his subjects. The radif position under the Khir kings belonged to the Banu Yarbu'. But when they decided to transfer this position to a person from another tribe, the Yarbuites refused to do this and entered the war with the king. Having won the battle, the Yarbuites regained their prestigious position.

Or it's known that the famous camel war began when one of the soldiers of the Jusham tribe, Kulayb ibn Wa'il, killed the camel Sirab. Kulayb's wife, Jalila, arguing that her two brothers Jassas and Hammam are stronger than Kulayb, provokes her husband. In a rage, he kills a camel, which belonged to his wife's aunt, turned up under his arms. Aunt Basus is inconsolable and demands revenge for the murder of her camel, which became the cause of a long-term bloody war.

The hero of "Days" looks at himself through the eyes of others, he needs their approval and respect. The already mentioned "Day Zahru al-Dahna" tells of the fact that once one of the poets Bashr ibn Abu Hazim in his poems expressed taunts of Aus ibn Haris and his mother. Upon learning of this, Aus attacked his herd and captured camels, and after a while he caught Bashr himself. Ausa's mother, Suuda, advised Bashr to let go, rightly reasoning that only his laudatory verses in honor of her son would wash off the poet's mockery. The conflict ended with Bashr ibn Abu Hazim saying: "*Oh, Almighty, be a witness that if I ever add verses, then only to the praise of Aus ibn Haris".* In another legend – "The Day of Al-Shibak" there is one such phrase: "*They killed our partner and, if they slip away from us now, the Arabs will forever blaspheme us for this*". It is clear that the Bedouin is not indifferent to the opinions of others, he must constantly affirm himself.

It is in terms of the hero's self-affirmation that the love story appears in the "First Day of Havza", which, on the whole, does not play an independent role in Ayyam al-Arab [2, p. 221-222]. This legend tells how Mu'aviyya al-Sulami – the brother of the famous poetess Hansa – met in place named "'Uqaz" a woman of extraordinary beauty, whose name was Asma al-Murriyya. When Mu'aviyya made an attempt to get to know her, she refused, saying that she belonged to another man. Enraged by the refusal, Mu'aviyya promised that he would take her from her husband by force. There was a quarrel between Asma's husband and her fan, and then a clash, as a result of which Mu'aviyya dies. It becomes clear that the love of Mu'aviyya at first glance is not the main theme, it serves only as a plot to the subsequent course of events that led to the clash of two tribes and the culmination of the story – the death of one of the heroes. However, the tradition does not end there, as the episode follows, telling about the response of the Sahra to the news of the death of his brother Mu'aviyya. Hashim ibn Harmal was sick because of the wound that Mu'awiyya inflicted on him in a duel. But when he saw Sahra, who came to his tribe, he ordered his people to meet the guest well. After greeting, Sahr asked: "*Who killed my brother?*", To which Hashim replied: "*If you get me or my brother Duraid, consider that you have avenged*". Then Sahr asked: "*How did you bury him?*" Hashim replied: "*He was wrapped in 2 cloaks, one of which costs 25 camels.*" Then Sahr asked to show Muhaviyya's grave, and, seeing it, he said: "*You see my grief, I will not rest until I take revenge for his death.*"

On this episode ends the legend "The First Day of Havza" and it also served as the compositional technique thanks to which the sorrow of Sahra and its desire to take revenge formed the basis of the plot of the next legend "The Second Day of Havza". Thus, we are dealing with a special kind of plot cyclization, which contains the possibility of further development of the plot and the introduction of new heroes.

By the example of this legend, it becomes obvious that love in "Ayyam al-Arab" does not act as the only topic determining the plot, the only factor guiding the heroes, since the heroes of the "Days" are depicted objectively and vitally. They cannot live in a world of "pure love", "idealization of love feelings", they must live with their tribe, conquer ponds and pastures, participate in raids and defend the honor of their tribe.

The interest in the human person in the period under consideration, respectively, is different than at present. The personality in "Days" is depicted somewhat vaguely, it is not self-enclosed and is not sharply opposed to others. The individual clearly opposes the "aliens" – natives from another tribes with whom this hero is not connected by family ties or friendly union. In relation to them, a person takes a position of caution, which at any moment can turn into hostility. An alien can be deceived, robbed and killed, that is, there is a very definite border between himself and "strangers". This border is abundantly watered with the blood of countless clashes and skirmishes. But the relationship of the individual with "his own", with members of the clan, family, with people connected by marriage, friendship, was built on a completely different basis. The circle of "their" belonged to people who asked for patronage from this tribe. The bonds between "his own" were strong and indissoluble, relatives were obliged to help each other, protect and avenge the murdered relative. Inside the "own", the boundary of the personality is diffuse. Contrasting himself with "strangers", the Bedouin cannot take the same position in relation to "his own". On the contrary, he does not separate himself from them, being one link in the chain of generations.

Therefore, it is so important that in each "Day" the full name of the heroes is given, the name of his father, son, the name of the tribe to which he belongs is indicated, up to an indication of the area where his tribe or clan lives. For example, Khujr ibn Umar ibn Mu'aviyya al-Kindi, who was known by the nickname Akil al-Murar. He was the grandfather of the famous Jahili poet Imru'ulqays. Readers of that time undoubtedly got acquainted with this genealogical list with great interest. Since each tribe in his mind was associated with some kind of story or a turning point in the fate of the tribe. This is a kind of folk memory, which found its reflection in the traditions of "Ayyam al-Arab". The enumeration of names in the "Days" is actually extremely informative, it serves as an indication of many other traditions in which these heroes participated. Indication of the name of a person, people connected with him by blood or marriage, was a characteristic of this person, since the name included this person in some kind of community, in the life of a certain locality and reminded of the events in which this person and his team took part.

The Bedouin is not separated from his original collective and can only be understood as a member of this collective. He thinks in terms of the whole and looks at himself through the eyes of society. His consciousness is individual; he cannot give himself a different assessment than that which society gives him. Even in those cases when he is outlawed and expelled from the tribe, he continues to look at himself by prying eyes. He does not accept opposing himself to the collective, and cannot accept proud loneliness, since expulsion from the tribe is a shame and inevitable death.

In one of the legends, "Nakhla Day" is narrated about a certain al-Barrad ibn Qays al-Kinani, whom the tribe expelled for drunkenness and a wild lifestyle. He went to ask for protection and patronage from another tribe of Banu ad-Dayn, but after a while they expelled him from their tribe, since he did not change his habits. The next stage of his wanderings ended when he was granted asylum by the leader of the Quraysh Harb ibn Umaya. But in Mecca al-Barrad continued his drunkenness. Then Harb ibn Umaya decided to get rid of the ungrateful guest. Having learned about the intention of his patron, Barrad says: "*You are one of those who, knowing me, have not yet expelled. If you do this, then no one else will accept me. I'd better leave myself, but don't declare me an outcast.*" Naturally, a person of that period does not think of his existence outside the collective. Leaving the Quraysh, al-Barrad himself does not lose hope of joining another tribe, which he would not be able to do if he were once again expelled and declared an outcast. In addition, the person had to maintain self-esteem, that is, enjoy the respect of the collective, not only "their own" – recognition should be universal. In the case of causing any damage to a person: physical or moral, the dignity of the person was called into question. And to restore peace of mind could only revenge on the offender.

Tradition continues the story of the future fate of al-Barrad. Every year the king of Khira an-Nu'man ibn al-Munzir sent a caravan of various goods to the fair in place named "'Uqaz" . Before the departure of the next caravan, al-Barrad volunteered to accompany him, but present at the conversation of al-Barrad – Urva ibn Ataba ibn Ja'far said: "*Shame if Khosrov's caravan is led by the exiled*". The caravan was led by Urva, al-Barrad was refused. The offender could not go unpunished, and al-Barrad follows him. He overtakes Urva and, without heeding his request for mercy, kills, then to lead the caravan himself.

So he restores mental balance, lost due to obvious neglect to him. The Bedouin feels confidence only after receiving just retribution, which meant recognition of his social significance or after the implementation of legal revenge, restoring his honor and dignity in public opinion, and therefore in his own self-esteem. It is interesting how meticulously in each "Day" the number of killed and wounded is given, the damage caused is estimated – these are not just "bare numbers". Since the size of the compensations received speaks of their status, which was respected. They are indicators of the social prestige of the parties. And the matter is not in the number of camels paid as "vira" (ransom) for the dead and not in material wealth as such. The main thing is that the size of these payments increases adequately to the increase the nobility of the person killed or committed the crime.

In the legend "As-Safka Day" the nobleman Havza ibn Ali al-Hanafi, being captured, offered for himself a ransom of 300 camels. The figure is considerable for one person. But the social assessment of the person acted not only when receiving the ransom, but also when paying it. Thus, nobles offered maximum compensation, confirming their noble origin and social status.

Among the many participants in the events, Bedouin women also occupy an important place. You can find many examples in them that indicate that they played an important role in the life of the tribe, their active participation supported and inspired the men of the tribe for exploits. The famous "Day of Halima" got its name in honor of the daughter of the Gassanid prince al-Haris – Halima, who was considered one of the most beautiful women of that time. During clashes between the troops of the Hassanid prince al-Haris and the ruler of Al-Munzir, al-Haris promises to give his daughter Halima to someone who will kill his opponent. One of the brave warriors of this tribe, Labid al-Gassani, kills al-Munzir and gets Halima as his wife. Thus, according to the legend of Halima, with her beauty he makes her "contribution" to the victory of the tribe. "The Day of Halima" – a beautiful woman and a rather brave daughter – entered the proverbial Arabs fund as a saying: "*Like on the day of Halima*", the origin of which, along with several other proverbs associated with the name of Halima, was explained by al-Maydani (d. 1124) in his collection "Majma'u-l-amsal".

But not only the appearance of the women inspired the warriors of their tribe. In the famous "Day of Zi Kar"[6] the daughter of al-Nu'man – Hind, learning about the approach of the troops of the

Persian king Khosrov, who is at war with the Arab tribes, says:

ألا أبْلغ بني بكر رسولا فقد جدَّ النفير بعنْفَقِيرِ
فليت الجيشَ كلهمُ فداكم و نفسي و السريرَ و ذا السريرِ
كأنّي حين جدّ بهم إليكممعلَّقةُ الذّوائب بالعَبُورِ
فلو أني أطقت لذاك دفعاً إذاً لدفعتُه بدَمِي وزِيري..[2, p. 29]

Did not reach the Banu Bakr messenger tribe
and people did not know about the impending misfortune
Oh, if the whole army sacrificed itself, and with them I and my loved ones.
I'm as if tied between them and you by Veronica's hair in the constellation of Twins
And if necessary, I will cut my veins, protecting him.

In the same "Day" just before the battle, another Bedouin woman said:

إن تَهْزِموا نعانق و نَفْرِشُ النَّمَارِق
أو تُهْزَموا نفارق فِراقَ غير وامق
[2, p. 32]

If you win, we will meet you with a warm hug,
and if you are defeated, then we will part forever.

In the war over the camel that we have already mentioned, one of the main participants in the events, Aunt Basus, is not a passive observer, but on the contrary, she incites revenge for the murder of her camel and further incites hostility between the tribes:

Oh Sa'ad! Do not be fooled and leave.
I am in a tribe whose neighbors die.
There is no one but you to protect the herd...[2, p. 117]

From the legend "The First Day of Havza" it becomes obvious that a woman in pre-Islamic Arabia did not cover her face, that is, did not wear a hijab, otherwise how could Mu'aviyya see her and fall in love with her at first sight. But in the traditions relating to the later period of the spread of Islam, it is already said that women began to cover their faces with a veil. So on "The second day of al-Fijar", it is told how once the youths from the Quraish and Kinana tribe saw a beautiful, slender Amirit woman, covered with a veil. And when they asked her to show them her face, she refused. Then one of them, deciding to play a trick on her, pinned the edge of her outer clothing so that when she got up, her lower shirt appeared. The boys laughed: "*You did not let us see your face, but we saw you from behind.*" An angry Amirit woman called on the men of her tribe, who taught a lesson to the offenders of their tribeswoman.

In the pre-Islamic period, the Arabs did not allow the familiar treatment of their women, considering it a personal insult. This is also evidenced by the traditions, for example, in the narration "Day of Sahbal" it is said that once the boys of the Banu 'Akil tribe met the girls from Banu al-Haris. A fellow tribesman of the girls noticed how one of the young men winked at a girl from his tribe and immediately dealt with the offender. For the Arabs there was no greater shame than the capture of their women by men from another tribe. To avoid this, the Bedouin could fight to the very end, as was the case in the tradition of "Al-Qadid Day". It tells how the leader of the Banu tribe, Jusham Duraid ibn al-Sammat, during his next campaign met a certain man who was taking his wife with him. Duraid ordered his people to take the woman and the camel from him. Protecting his wife, despite the fact that the forces are not equal, was more important for the Bedouin than his own life. It is important to note that such events are described in the "Days" in a concise and restrained manner, which creates a false impression of the emotional poverty of the narrative and speech of the characters. In fact, the Bedouin does not say long monologues about his feelings for a woman, his actions speak for themselves.

The already mentioned legend, "Day of Zi Kar" contains a story about the quarrel of the Persian Khosrov with the Khira ruler of the Arabs an-Nu'man, which occurred due to the refusal of the latter to send one of the Arab women to the palace to Khosrov. According to this legend, the Persian kings had their own requirements for female beauty, and the "standard" of female beauty that had developed by that time looked like this: "*I am sending the king a beautiful concubine of proportional build, with clean skin and mouth, white as moonlight, with thick and long eyebrows , black-eyed and big-eyed, with an aquiline nose and smooth cheeks, causing desires; with thick hair and a regular-shaped head, small ears, a long neck, high and full breasts, sloping shoulders and forearms, thin wrists and delicate fingers, with smooth nails, with a hot belly and thin waist ... nice in the company, which does not run into trouble , calm behavior, gentle nature, with a beautiful mole, restricting communication with his father and dispensing with the advice of relatives, well-mannered, reasonable in judgments and judicious in actions, with skillful hands, laconic in speeches, in a low voice; praising his patron and condemning his enemies ...*

... I told you about their unwillingness to give their women to others. The reason for this is their distress and the voluntary choice of hunger and nudity instead of satiety and rich decoration, they will prefer the winds and the samum to the aromas of your land, even if they are imprisoned ..." [2, p. 23-25]

These words describe the Arab women who are ready to endure all the troubles and hardships near their husbands and share with them all the hardships of a nomadic life.

However, in some legends, for example, "The War of Ka'ba ibn Amr" or "Day of al-Baradan", one can also find stories about the insidiousness and inconstancy of the Bedouin women. The last of them tells how the leader of the Kinda tribes, Khujr al-Kindi, went on a campaign in Bahrain [2, p. 41-43]. Taking advantage of his absence, the ruler of Syria, Ziyad ibn Habul, seized all the property and women of the Kinda tribe, among whom was Khujra's wife – Hind bint Zalim. Soon, a conversation took place between Ziyad and his captive Hind, in which she confesses that her husband, Khujr, is hateful to her. Hind had long wanted to get rid of her unloved spouse and took advantage of a convenient case of her captivity. Khujr did not forgive the insidiousness and betrayal of his wife Hind and brutally executed her:

"*... And his wife Hind Khujr tied to two horses, then they were driven in different directions and they tore her up. About this he said:*

If someone after Hind seduces another -
That blind and deaf, foolish fellow.
Her face and conversations were sweet
Everything that she hid was bitter
You'll never find this among women,
To truly love, did not change..." [1, p. 85-86]

Conclusion.

The analysis shows that Arab tribal traditions are distinguished by an accurate (sometimes to the smallest details) depiction of real life, real conflicts and situations, heroes and participants who actually lived then. In other words, there is no insurmountable barrier between the real world and the world being represented, which is inherent in some epic works. As a consequence of this, in these traditions there is no free fiction, because an important requirement for them was the requirement of accuracy, which is generally inherent in the epic, and not only in Arabic. The style of "Ayyam al-Arab", covering events and describing all the participants and other details, is distinguished by the cost of visual means. All events and objects are described briefly, concisely, but very richly, and are necessarily related to the story of conflict, clash, revenge, etc. The main principle of epic narratives, including Arab tribal traditions, is that events are presented in a single-time sequence, that is, there is no return to the past or "running ahead" here.

If we talk about the heroes of "Ayyam al-Arab", it becomes obvious that the descriptions of human's inner world, his feelings and experiences were not inherent in the Arabic literature of the early Middle Ages, since the human person did not attract so much attention to become an object of the image. After all, the main thing was the image not of people, but of turning events and conflicts, clashes and wars, vital for the tribes. And therefore, the character of the heroes is symptomatic, i.e. as if by itself, it consists of his actions and deeds, and not vice versa.

Regarding the status of Arab women of the pre-Islamic period, many examples can be found in the legends, testifying to the almost equal position and important role of the Bedouin woman in the life of her tribe. The feelings and attitudes of the Bedouin towards a woman are expressed in his actions, which speak for themselves: he violently defends the honor of his mother, wife, sister, relative or just a tribe, but does not forgive and severely punishes betrayal and treason. Traditions are not limited to the one-sided characteristic of a woman in pre-Islamic Arabia, her idealization. The appearance of the Bedouin woman is not yet individualized, since the epic, as a genre, did not yet know the art of portraiture and did not honor the woman with an individual portrait characteristic and the disclosure of her inner psychological world. In other words, the type of woman is not yet endowed with "individual" qualities, either they are smart, insightful, and virtuous, either they are brave, initiative, and selfless, or they are evil, cunning, and treacherous. However, the shades of psychologism, a deep disclosure of the character and inner experiences, the depiction of the versatility of heroes are not worth talking about, because the complexity of the human character did not fit into the framework of the traditional heroic content and established ways of depicting reality.

It is important to note that the prosaic Arabic text of the Jahili period does not refer to gods or a superman endowed with mythical and supernatural qualities, but to a simple person, Bedouin, warrior. Later, during the period of the spread of Islam, prose dealt more with Almighty, filled with many edifications and admonitions. Another difference of "Ayyam al-Arab" from late medieval literary works is their originality: there is no influence of Indian, ancient Iranian, Greek literature, as, for example, in later literary works.

So, we can say with confidence that the participants in the historical events of the pre-Islamic period are heroes both in the broad and narrow sense of the word. They really existed and were glorified heroes of turning events in the history of the Arabian tribes, and they characters – heroes of the people's memory, who received their artistic expression in oral tribal traditions, and later became prototypes of literary heroes in classical and modern works of fiction.

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NIZAMI GANJAVI 880: HERITAGE OF GANJA BASED ON ARCHITECTURAL AND CRAFTSMANSHIP FEATURES OF SEBZIKAR GRAVEYARD

Abstract: *Sebzikar cemetery, located in the ancient quarter Sebzevad in Ganja city, as an important medieval monument was investigated from the historical and ethnographic point of view. Significance of this monument as an important example of pan-Islamic spiritual and material culture, an open-air museum, its significance as a material source in the study of tolerance traditions in Ganja, as well as in the development of architectural and local craft traditions, which are the important indicators of urban culture, were also investigated in scientific article based on academic sources.*

This grave-yard has preserved many material and cultural samples, historical sources - tombstones, epitaphs, ancient tombstones. Sebzikar cemetery has a rich history of more than five centuries. There are more than one hundred tombs and graves here. Among these monuments, tombs and graves of the descendants of the city's outstanding clans have the main importance. Along with the ancient tombs preserved in this unique historical and architectural complex to this day, the characteristic features of the gradually destroyed tombs were studied on the basis of various written sources, scientific works, archival documents and historical sources. For the first time in this research, significance of Sebzikar monument as sample of local traditional architecture and crafstmanship.

This scientific paper dedicated to the 880th anniversary of the great Azerbaijani poet and thinker Nizami Ganjavi. Because of this genius personality enormous contribution to the cultural heritage of the world, by the order of President of Azerbaijan has been announced 2021 - the 880th anniversary of his birth - as the year of Nizami Ganjavi.

Key words: *Ganja, Sebzikar grave-yard, architecture, multidisciplinary research, handicraft traditions, urban culture, tolerance.*

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Without the skill every work is hard,
First acquire skill, then do the work.
One honey making bee is better,
Than hundreds of the stones.
Sheikh Nizami Ganjavi

Introduction

Ganja, one of the centers of science and culture with an ancient history of Azerbaijan, has been distinguished for centuries by its national and spiritual values that characterize the culture of coexistence. Here, regardless of national or religious affiliation, people have always lived in peace and tranquility.

The ancient center of tolerance and multiculturalism, Ganja is the second city of the East, where to this day hundreds of Muslim, Christian, Lutheran and pre-Islamic tombs, tombstones, mausoleums in the ancient sanctuary "Imamzada" and the cemetery "Sebzikar" are preserved. One of the main historic-architectural monuments of Ganja - Imamzada tomb-complex attracts the attention of a number of features from the point of multiculturalism view. Ganja Imamzada is an important pilgrimage shrine. This place is visited by thousands of people every year. It should be noted that the number of visitors is increasing every year as well as foreign countries.

Undoubtedly, along with about twenty ancient mosques, numerous tombs, two mausoleums, Imamzade monument, genealogical tombs, such as local architectural gems of Islamic culture, preserved in Ganja, Albanian temples, churches, as well as in the XIX century. There are also monuments of Christianity and Judaism [5, p. 16-17].

One of the oldest Orthodox churches in the western part of the country is located in the Dabbaglar neighborhood of Ganja named after Alexander Nevsky, and to this day Christian believers perform religious rites, celebrate important historical dates and holidays. This ancient temple is preserved as an important historical and architectural monument, and the residents of the city treat Orthodox believers with respect and dignity. All necessary conditions have been created here for the organization of religious, social and socio-cultural activities of the representatives of the largest Orthodox community in the Western region of our country [1, p. 24-28].

Thanks to the consistent and uninterrupted transmission of traditions and values from generation to generation, our national and religious values, based on ancient historical roots, were revived not only in the Middle Ages, where feudal relations existed, but also in the new era - the XIX century and beyond. It is noteworthy that although many historical neighborhoods of Ganja are gradually disappearing as urban units, the residents living here today do not forget the centuries-old traditions of coexistence, multicultural values, traditions of tolerance, and live them with dignity.

By the way, research of architectural and craftsmanship traditions as the sample of tolerance and multicultural values is an innovative approach. That is why teaching of these issues is necessary; also it is the part of process of humanization of education. In the modern world, which is characterized by complex processes, independent Azerbaijan stands out as a stable and secure state. Multiculturalism plays a huge role in modern Azerbaijan, for it ensures sustainable economic, political, social, cultural development of the country. The multicultural model of modern society is being formed in line with the main vectors of state policy.

In the modern world, it is necessary and in demand, first of all, innovative parameters in the educational system. At the same time, we emphasize that the important regulating factors of life in a particular society are determined by national values. It is cultural values that determine the basis of choice in the educational process and stimulate its improvement, since they have the functions of socially significant “prescriptions”.

Humanities education forms a certain attitude towards cultural and national values. So, let us note, first, the individuality of the individual and the corresponding value preferences. Secondly, the needs and abilities of the members of the social community and, thirdly, the importance of cultural values proclaimed in a particular state system.

There is no doubt that education, viewed as a holistic, organized and integrated system, is open to innovation. The functioning of this kind of system will inevitably use the ideas and knowledge of the social collective, both accumulated during the long history of the people and dictated by the modern needs of society [7, p. 15].

One of the priorities of innovative processes in modern education is the search for a universal scientific basis. The indisputable advantages of generalization and the breadth of humanitarian educational models lie in the integrity, interdisciplinary approaches.

The wide range of the integration approach makes it possible to develop common principles and criteria of modern spirituality, which is necessary in modern interdisciplinary dialogue.

Materials and methods

Elements of craftsmanship observed in the construction of arches, which are valued as a valuable construction and architectural method, as well as the presence of features that are typical for samples representing different types of pottery in Ganja, which has thousands of years of history and rich artistic traditions. It is necessary to pay special attention to the fact that urbanization in Ganja is one of the most important indicators of the urban planning process; many fields related to the production of clay products have been formed and developed over the centuries.

Examples of epigraphy also show that architecture and craftsmanship in Ganja have been formed since ancient times, enriched with new features over time, thus relying on previous traditions, and thus the elements of urban culture are based on very ancient historical periods. Among the most important historical features of Ganja Imamzada and Sebzikar epitaphs, ancient tombs, tombstones are the creation of conditions for the study of ancient religious views and ideas of Ganja, our people as a whole, beliefs and convictions about the hereafter [2; 4-6].

In Sebzikar complex one of the important features of both the sarcophagus and tombstones and tombstones, along with their structure, was the epitaph in the Arabic alphabet, as well as the carving and embossing of floral and geometric patterns. Graves and tombstones, which are distinguished by their originality, especially by their bulge (or, more precisely, by their reliefs, reliefs and patterned elements) and are considered new for the first medieval period under consideration, are very important in the study of urban culture in Islam [6-10].

Despite the widespread use in the geographical region, religious and national values that have developed on the basis of centuries-old traditions in the territory of Azerbaijan, especially in the city of Ganja, which has always maintained its position as a cultural center, have not passed over funeral customs. As a result, our centuries-old craft and architectural traditions have enriched Muslim funeral customs and rituals from the medieval period, creating the conditions for the erection of tombstones, provided that the new functions relate to ancient traditions [5; 8-10].

The architectural traditions of Ganja city, both for the ancient and antiquity periods, as well as for the early Middle Ages and later, were gradually assimilated by the Arabs who ruled in the territory of Azerbaijan in the VII-VIII centuries. In later historical periods, Azerbaijan was founded by most of the other peoples included in the Arab Caliphate, which included a very large geographical area - the Atlantic Ocean from the west, the Iberian Peninsula, as well as North Africa, as well as from East to Central Asia and China. Erected in ancient cultural centers such as Ganja, mastered the art methods of construction traditions and successfully applied in the construction of magnificent monuments.

Respect for the spirits of ancestors in the Ganja Sebzikar cemetery is considered to be a sign of respect for the tombs, where they slept forever, and in most cases belongs to the first millennium BC (V-IV centuries BC) and the first medieval stages of our era. The main features of Albanian cemeteries are obvious. In this regard, it is necessary to pay attention to several valuable historical and ethnographic points:

- Preservation of important features of pre-Islamic national customs and traditions related to funerals [1; 6-8];

- Coincidence of some stable features of the tomb structure typical of the Albanian necropolises (this type of our ancient tombs, which existed in pre-Islamic historical periods);

- to observe the regularity of the arrangement of the graves, which our ancestors protected from generation to generation as an important trust, as it has been for thousands of years;

- In Ganja, as it was many centuries ago, far from the notion of familiar and foreign graves, no distinction is made in the grave where each deceased person is buried, preserving the tradition of treating all graves with equal respect;

- Performing funeral rites, provided that they do not contradict the most important rules and instructions of Islam, and pass on the foundation of our very ancient religious ideas, including a number of traditions and ideas related to Zoroastrianism and fire-worship, as important values to future generations;

- Ganja Sebzikar cemetery has not only the oldest preserved tombstones, but also many tombs built in later historical periods, as well as tombstones with special mastery by Ganja artists of different floral (vegetative) or geometric elements of local Arran architectural school traditions engraving;

- In tombstones of Ganja Sebzikar cemetery, which have unique construction features, separate cosmogony, astral images, embodying the ancient religious-mythological worldview and imagination of our people, as well as the ancient history of urbanization culture of Ganja people. both tombs and tombs - visual application in tombs;

- In Ganja Sebzikar cemetery, various swastika, as well as abstract, as well as anthropomorphic (having a human image) preserved and preserved in the folklore of many Turkic peoples and ethnic groups associated with fire worship, Zoroastrianism, on the one hand, and pre-Islamic Albanian culture on the other.) and zoomorphic (in the form of animal depictions) to one degree or another during the construction of the above-mentioned tombstones.

The creation and existence of Libra has been determined, and as a result, in the city of Ganja, where justice and integrity have been persistently protected for millennia, as a visual proof of respect for our religious and moral values and, most importantly, practical devotion, regardless of social affiliation, religion As in the past, the memory of the eternal inhabitants of this sacred shrine must be respected.

Applied features of investigation

Ancient city Ganja is one of the first centers of urban civilization (urbanization) not only of the Muslim East, but whole of the World. Ganja has a history of at least 4000 years of the Muslim Orient and here are old monuments, tomb of Aposlels, a valuable sanctuary. Sebizkar tomb is considered to be the most important symbol of the city. Important historical source of the yearbook was revealed from this monument. On the territory of the ancient, historical and architectural complex of modern times to save more than 100 ancient and unique tombstones. These tombstones are mausoleums Serdabe (local sarcophag). Ganja Sebizkar tomb was for centuries the sanctuary of the Muslims, who had come not only from Azerbaijan, but also from other countries [1, p. 220-222; 11-13].

Here you can follow the development of the craft and architecture based on the study of the grave. The architectural monuments of this ancient city preserve the traditions of multiculturalism and tolerant values. This cemetery is included in the list of protected cultural and historical monuments in the country. The decorative art applied mainly relates to everyday life. The field is divided into two parts in terms of raw materials: metal, ceramics, textiles and wood and technology: carving, casting, embossing and weaving [1, p. 117-121; 10-12; 17, p. 344-345].

Working in applied arts reflects the perspective of society, daily life, customs, traditions and aesthetic vision. The various areas of applied decorative art in Ganja include ceramics, copper work, carpet knotting, jewel weaving, carving and stonework [3; 5; 9-11].

This ancient cultural and scientific center – Ganja city has a rich history and here there is one of the main and ancient historical-architectural monuments of Muslim East civilization - Sebzikar. This grave-yard is recognized as one of the basic symbols of city.

At this monument were found some important historical sources – epitaphes. **S**ebzikar was completely built in the end of XVII century – the beginning of XIX century.

This main historic-cultural complex has more than 500 years old. But in XVII-XVIII centuries there were built a mosque, some temples and other constructions. On the territory of the ancient historical and architectural complex of modern times to store more than 100 ancient and unique tombstones. These tombstones are mausoleums Serdabe (local sarcophags) [3-7].

During the centuries many visitors, guests from different parts of Azerbaijan, also from the other Muslim countries visit Ganja **S**ebzikar monument (grave-yard).

Teaching of these values, traditional architechture and handicrafts features is so important in our country. Educational processes, carried out on the basis of a systemic interpretation of the material, make it possible to develop correct guidelines in the huge information flow of the modern cultural space. The continuous changes that are so characteristic of the modern world require adequate educational correction. Thus, it is possible to understand and change human consciousness, without which its vital activity is inconceivable [3; 6-8].

The modern educational process consists of a number of important vectors, among which the priority ones are:

1. Control system;
2. The nature of training, implying not only deepening in one's specialization, but also expanding the interdisciplinary horizon;
3. A significant change in the administration policy based on the strategy of global thinking.

The emergence of information culture is a person's response to the challenges of the new time, responding to certain challenges, a person develops, since challenges force us to strain, put forward new ideas, form new structures to cope with challenges. The uniqueness of a number of modern challenges, - the so-called global problems of our time, - in the fact that, firstly, they are of a planetary nature, and secondly, they are systemic, interact with each other, enhancing the synergistic effect of the impact on modern civilization [2, p. 119-120].

Comparative approach to the research of architectural heritage of Ganja based on construction characteristics

Sebzikar grave-yard as one of the historical symbol of Ganja city, also sample of the ancient material-cultural source in research of tolerance culture in our country has a great importance. The historical heritage, rich past of this city has similar features with Sebzikar monuments. Because in the territory of this ancient grave-yard have been preserved so many samples, monuments of multicultural heritage, urban culture characteristics of Ganja city for centuries.

Examples of Ganja Sebzikar cemetery, which is part of this sacred place - a place of constant pilgrimage of city dwellers for centuries and is considered the oldest tombs in the history of the cemetery, are not limited to the construction of Islamic-Muslim cultural traditions, including tombstones.

These examples of valuable epitaphs - depictions on ancient tombs and tombs, as well as writing elements, as well as local and national architectural and artistic traditions that existed and developed in the pre-Islamic period in Azerbaijan, referring to millennia in the form and technology of tomb monuments should not be overlooked. Because these relatively older examples of the tombs of the Sabzikar complex clearly reflect the centuries-old valuable artistic features of the local Aran school of architecture in Ganja.

For centuries, there have been fertile conditions for the formation of a culture of coexistence in the traditional neighborhoods of Ganja, such as Imamli, Sabzavad, Attarlar, Zarrabi. These urban planning units include monuments that have survived to the present day, the Imamzade Mausoleum, the Sebizkar cemetery, the Alley of Martyrs, as well as the Russian, Ukrainian, Belarusian, Jewish, and even Spanish civil wars in the late 1930s. The preservation of the graves of aviators of Spanish, Hungarian, Russian and other nationalities who studied at the pilot school operating in Ganja city secondary school number 30 during the first half of the XX century. Like many historical and architectural monuments of Ganja, the Imamzada tomb provides a basis for the establishment of a culture of high religious tolerance and tolerance of our people.

This positive human quality, which has a special place among our ethnic, spiritual and ideological features and can be shown as a real example for the peoples of the world, has been preserved in Imamzada, as well as in other shrines of our country. In a broad sense, it can be noted that the Ganja Imamzada mausoleum complex has a significant impact on strengthening the attitude, loyalty and bigotry of our people to the traditions of national statehood. Thus, the Imamzada shrine, first of all, as a national treasure of our people, a historical monument, as a carrier of our material and cultural heritage, transmits our ethnicity from generation to generation and lives it [6, p. 49-57; 9, p. 359-360].

One of the most important qualities of our people is kindness, generosity and generosity. In this regard, the Imamzada shrine is a real source of example. Thus, both during important public holidays and religious ceremonies, as well as on ordinary days, people from many different social groups and classes organize ehsan tables for pilgrims. In addition, it is especially commendable that during the important religious ceremonies and holidays, many believers and residents of the city voluntarily participate in blood donation campaigns without any distinction.

Conclusion

Sabzavad was one of the neighborhoods that proved that Ganja is one of the cities where historical coexistence and cultural traditions are preserved. The ancient Sebzikar cemetery, which continues to exist here to this day, is of special importance.

Sebzikar cemetery, which was included in the list of real historical and architectural monuments of local importance in 1968, is an example of material culture of special importance in this regard, as an open-air museum. The tombstones of Ganja Sebzikar grave-yard, despite the similarities with each other, no tomb or mausoleum replicates the architectural style of the other.

It should be noted that many of the graves and grave monuments in the territory of Ganja Sebzikar cemetery are not found not only in some regions of Azerbaijan, but also in most parts of the world.

Study of architectural and craftsmanship traditions as the sample of tolerance and multicultural values is an innovative approach. That is why teaching of these issues is necessary; also it is the part of process of humanization of education. Relying on the possibilities of universalization and humanization of knowledge, it is necessary to form such paradigms of education that will contribute to the improvement of spiritual culture [2, p. 119-120].

In the context of modern Azerbaijan, the solution to the problems posed to culture presupposes the implementation of a new educational policy. Let us emphasize the significant activation and creative flourishing of the culture of Azerbaijan. In these conditions, the active dynamics of development of all its levels testifies to the support of the state and giving a special status to culture in modern Azerbaijan.

A rich history, vast cultural experience, progressive cultural policy - all this gives impetus to the development of modern, new approaches to liberal arts education.

Research and study of local arhitecture, craftsmanship traditions in very important as national-moral values. In contrast to the primitive, simple systems of religious thought, such as fetishism, totemism, and amimism, which generally include the worship of ancestral spirits, animals, and plants, as well as individual natural monuments, They were based on religious beliefs such as divinity (or the religion of the heavenly gods), Zoroastrianism, and fire-worship, which embodied monotheism.

For this reason, in the historical stages after the adoption of Islam, as in our time, our pre-Islamic national and spiritual values have developed in unity with our Islamic and religious traditions and have been preserved and passed down from generation to generation. At the same time, graves and tombstones, which embody the organic connection between Islamic values and national and spiritual traditions in our places of ancient history, such as Ganja Sabzikar cemetery, highlight another very important historical fact [2, p. 119-120].

Thus, the Arabs, who created a powerful empire in the VII-VIII centuries and subjugated a very large territory and came to the territory of Azerbaijan, for the first time faced the issues that amazed them. So, for the first time, they were confronted with the stubborn resistance of very patriotic and brave people. In addition, the Arabs were amazed by the monuments created by our ancestors, who have many times higher cultural values than themselves. Our people, who have a history of at least five thousand years of statehood, have long benefited from this rich experience of governance.

The study of the art of pottery and its various fields is important as a source in the study of the rich parts of underground Ganja with the above-mentioned unique examples of craftsmanship of particular interest in the construction of material culture is the use of baked red bricks as a building material (as a local building material), which is typical for Ganja. Many tombstones in the Sabzikar cemetery, as well as the materials used in the preparation of the graves, are based on local raw materials, as well as through various chemicals, turned into appropriate additives.

Thanks to the scientific study of the centuries-old tombs of Ganja Sabzikar cemetery, it is possible to study in more detail the multicultural values and traditions of tolerance in the city with reference to new sources.

For the first time in this research, significance of Sebzikar monument was studied in investigation of multicultural values in Ganja city, which has an ancient and rich historical past, as well as in the formation and preservation of the traditions of a culture of peaceful coexistence - tolerance.

The main characteristic features of the formation and development of multiculturalism, tolerant values over the centuries in such ancient quarters of the city as Imamly, Sebzevad, Ettarlar, Zerrabi, Ozan, etc. were also investigated.

The construction and preservation of such important material and cultural monuments as mosques, an Orthodox church, the German Lutheran church, Albanian temples - monuments of the pre-Islamic period in Ganja have been studied as the main indicators of the traditions of a culture of peaceful coexistence - tolerance in this ancient city. In article have been noted some statistics on the ethnic composition of the city population based on scientific documents.

In addition, on the basis of undeniable arguments and facts, scientific sources, the importance of the existence for centuries of such residential quarters as the quarter (corner) of Jews, a separate residential area of Lezghins, Lahijes, etc. along with the local historical quarters of Ganja is proved [1, p. 220-222; 5; 6, p. 17-24, 100-105].

By the way, in the territory of Sebzikar grave-yard, also in Imamzada cemetery have been preserved ancient graves, tombs and other monuments of the representatives of generations of such famous historical personalities as thinker and poet Nizami Ganjavi, first female philosopher and poet Mahsati Ganjavi, writers and educators - Mirza Mehdi Naji, Mirza Shafi Vazeh and etc.

Acknowledgements

This scientific paper dedicated to the 880th anniversary of the great Azerbaijani poet and thinker Nizami Ganjavi. Because of this genius personality enormous contribution to the cultural heritage of the world, by the order of President of Azerbaijan has been announced 2021 - the 880th anniversary of his birth - as the year of Nizami Ganjavi.

The works of Nizami Ganjavi were translated into many languages. The rare manuscript copies of his works are kept and preserved like precious pearls in famous libraries, museums and literary foundations in cities such as Moscow, St. Petersburg, Baku, Tashkent, Tabriz, Tehran, Cairo, Istanbul, Delhi, London, Paris and others. Monuments to Nizami Ganjavi are found in many cities of Azerbaijan, as well as in Moscow, Rome, St.Peterburg, Kyiv, Beijing, Tashkent and etc.

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DETERMINATION OF FAT MASS RATES IN MELTED CHEESE 20% - 30% FAT CONTENT

***Abstract**: This work examines the "Method for determining 20% -30% fat content of processed cheese products" presents the results of research on this topic, analysis of foreign and domestic scientists and their literature. The data were summarized and scientifically analyzed. The place, quality and safety of food products, including cheese products, i.e. classification and certification of their chemical composition and composition of biological substances, classification of cheese, nutritional and biological value of processed cheese products. Examples of cheeses with 20% -30% fat content are given. The need for a commodity nomenclature in international trade is highlighted on the basis of an analysis of local and foreign literature.*

***Key words**: products in local enterprises, commodities, milk, raw materials, management, density, consumer protection, customs expertise.*

***Language**: Russian*

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ОПРЕДЕЛЕНИЕ МАССОВОЙ ДОЛИ ЖИРА В СЫРАХ ПЛАВЛЕННЫХ 20%-30% СОДЕРЖАНИЕМ ЖИРА

***Аннотация**: В этом работе рассматривается «Методика определения 20%-30% жирности плавленных сырных продуктов» представлены результаты исследований по данной теме, анализ зарубежной и отечественной учёных и их литературы. Данные были обобщены и научно проанализированы. Комментировано место, качество и безопасность пищевых продуктов, в том числе, сырных продуктов, т.е. классификация и сертификация их химического состава и состава биологических веществ, классификация сыра, пищевая и биологическая ценность плавленой сырной продукции. Приведены примеры сыров 20%-30% жирности. Освещена необходимость товарной номенклатуры в международной торговле на основе анализа местной и зарубежной литературы.*

***Ключевые слова**: продукция в местных предприятиях, товар, молоко, сырьё, менеджмент, плотность, защита потребителей, таможенной экспертизы.*

Введение

Освещен необходимость теоретических взглядов современных учёных отрасли в развитии ТНВЭД, значения химического состава, строения, а также потребительских свойств товаров при их классификации и идентификации, значение таможенной экспертизы в защите потребителей от некачественных и опасных товаров, применения систем менеджмента качества при сертификации товаров соответственно международным стандартам на основе гармонизированной системы. В связи с этим, основной целью диссертационной работы является получение нового товарного кода на основе ТН ВЭД.

Сырная продукция в местных предприятиях по переработки молочных продуктов по классификации делятся на пять основных блоков, каждый из них состоят из нескольких групп. Всего классифицировано 18 групп сыра. Но, плавленые и обогащенные приправами и ароматизированные сыры не вошли ни в одну группу или классификацию. Эта информация показывает, что новизна данной научной работы ранее не освещена ни в одном научном тексте. В других зарубежных странаханалог данного продукта не существует. Такие указания не даны в составе (рецептах) других сыров. В настоящее время существуют несколько классификаций плавленных сыров, это объясняется не только их разнообразием ассортимента, но и задачами, поставленными перед производителями. Сыры можно разделить на три основные виды: ***традиционные, региональные и местные.*** Сыры, распространенные во многих странах, считаются традиционными. Органолептические и физико-химические свойства их строго контролируются.

Во время процесса классификации плавленых сыров необходимо определить плотность молока. Изометрическое определение плотности молока. При 20°С плотность молока, количество соединяется с его объемом.

Единица измерения- г/см^3 или кг/м^3. Коровье молоко, обычно, имеет плотность от 1-27 до 1033 кг/м^3. Плотность молока зависит от его температуры (уменьшается с увеличением количества жира, протеинов, лактозы и солей) и некоторых условий переработки молока. Плотность молока определяется с помощью нижеследующего уравнения:

$$D^{20}{}_{20}\,(m_2 - m_0) / (m_1 - m_0),$$

где m_0 – масса пустого пикнометра, г; m_1 – масса пикнометра с дистиллированной водой, г; m_2 – масса пикнометра с исследуемой жидкостью, г

Гравиметрические методы

Определение влаги и сухого вещества (ГОСТ 31449-2013.)

В молоке содержится 86–89 % воды большая часть которой находится в свободном состоянии (83–86), а меньшая – в связанном (3–3,5 %). Свободная вода является растворителем органических и неорганических соединений молока и участвует во всех биохимических процессах, протекающих в нем. Она легко удаляется при сгущении, высушивании и замораживании молока. Формы связи отличаются природой и прочностью связи. Наиболее прочной является химическая связь, наименее – механическая. Связанная вода по своим свойствам значительно отличается от свободной. Она не замерзает при низких температурах, не растворяет электролиты, не удаляется при высушивании. Связанная вода недоступна микроорганизмам. Поэтому для подавления развития микрофлоры в пищевых продуктах свободную воду либо полностью удаляют, либо переводят в связанную, добавляя вод связывающие компоненты (соль, сахар, многоатомные спирты). При уменьшении содержания свободной воды снижается значение активности воды. Под активностью воды αw понимают отношение давления паров над данным продуктом к давлению паров над чистой водой при одной и той же температуре. Для нормального роста микроорганизмов величина активности воды не должна быть менее 0,8–0,9; для дрожжей и плесеней – не менее 0,6–0,9. При меньших значениях микрофлора не развивается.

Сущность метода.

Определение влаги и сухого остатка основано на высушивании навески исследуемого продукта при постоянной температуре (102 ± 2) С до постоянного веса. Массовая доля сухого вещества зависит от состава молока и колеблется от 11 до 13 %.

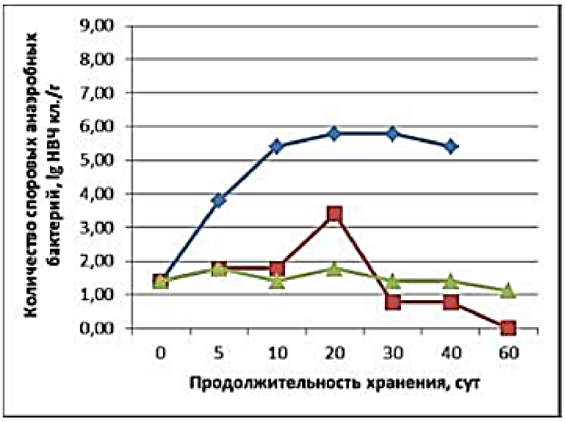
Используемое оборудование: сушильный шкаф, весы аналитические, эксикатор, металлические бюксы, пипетки на 5 см^3, марля.

Таблица 1.

Наименование видовой группы	**Наименование сыра**	**Массовая доля, %**			
		жира в сухом веществе не менее	**влаги не более**	**поваренной соли, не более**	**сахарозы, не менее**

Сыры плавленые ломтевые	- без наполнителей; - с ароматом баранины; - с красным перцем; - с пряностями; - ароматизированный	20 30 50 60 25 20 20 20	60 60 52 52 55 58 58 58	3,0 3,0 2,0 1,2 2,5 2,5 2,5 2,5	- - - - - - -
Сыры плавленые сладкие (IY):	- шоколадный; - фруктово-ягодный ароматизированный; - без наполнителей; - с наполнителем; - овсянка с медом;	25 15 25 25 25 44	40 48 47 47 45 54		25 20 20 20 20 2
Сыры плавленые к обеду (Y):	- для овощных блюд;	50	58	2,5	50
Сыры плавленые кремовые (YI):	- без наполнителей; - с наполнителем; - на творожной основе с зеленью; - на сметанной основе с зеленью; - ароматизированный;	50 55 50 50 65 70 50	52 52 55 59 62 60 57	2,0 2,0 2,0 1,5 1,5 1,5 1,5	- - - - - - -

Примечание: допускается в отдельных пробах отклонение по массовой доле жира в сухом веществе сыра на ±1% и по массовой доле влаги на ±1% против норм, установленных настоящим техническим условием. Массовая доля жира и влаги в средней пробе должны соответствовать требованиям, указанным в таблице 1. Допускается отклонение по массовой доле сахарозы в сладких сырах на ±1%. Выявлено, что использование в качестве эмульгирующихся солей фосфатов с добавлением длинноцепочечных полифосфатов, является значимым фактором, подавляющим развитие споровых микроорганизмов[1,2,3,4,5]. Применение данных эмульгирующихся солей значительно увеличивает хранимо способность плавленых сыров, рисунок 1



К-1 - цитрат
К-2 - Сольва полифосфати
К - 3 полифосват Сольва узун занжрли полфосфат.
Изменение количества споровых анаэробных бактерий в плавленом сыре, выработанноме различными эмульгирующими солями

Рисунок 1.

-цитраты повышают уровень микробиологических рисков и снижают хранимоспособность плавленых сыров.

Для исследований микробиологических рисков, связанных со споровыми бактериями, проведены экспериментальные выработки плавленых сыров с разным уровнем обсеменения смеси для плавления тест-культурами микроорганизмов рода Bacillus и рода Clostridium. Для всех вариантов испытывали три температурных режима плавления: (75+2)ºС, (85+2)ºС, (95+2)ºС . Установлено, что ни одна из исследованных температур плавления не приводит к существенному снижению микробиологических рисков, связанныхкак со споровымиаэробными, так и со споровыми анаэробными микроорганизмами, а наоборот провоцирует процесс прорастания спор. Температура плавления (95+2)ºС является наиболее эффективной в отношении данных групп микроорганизмов, однако не снимаетполностью, связанные с ними микробиологические риски.

При определении показателей качества и безопасности плавленых сыров были использованы следующие нормативные документы, а также Государственные и местные стандарты:

ГОСТ3024:2015 «Плавленый сыр», Технологическая инструкция по производству сыра плавленогос рецептурами ТИ 26630968 - 01:2019, ГОСТ 13928-8 «Заготовка молока и отбор образца для проведения физико-химических исследований», ГОСТ 3624-92 «Соответственная кислотность молока», ГОСТ 9225-84 «Молоко и молочные продукты. Методы микробиологического исследования», ISO 22935-1-2009 «Молоко и молочные продукты», ISO 5764-87 «Молоко. Определение точки замерзания», ISO 7218-96 «Микробиология. Продукты пищевые», ISO 8870:2006 «Молоко и продукты на основе молока», Определение антибиотиков в составе молока СанПиН 0281-10 "Гигиенические требования к производству молочной продукции", СНиП 11-90-81, "Правила установки электрических приборов" (ПЕС), СанПиН № 0283-10 “Гигиенические требования к безопасности пищевой продукции”, СанПиН №№ 0324, 0325 и № 0326“Санитарно-гигиенические нормы и правила”, СанПиН 0281-09 “Гигиенические требования к производству молочной продукции”, СанПиН 0366 "Гигиенические нормативы безопасности пищевой продукции”,“Подготовка образцов при определении микробиологических показателей. Были изучены состояние микроклимата (химические вещества) производственных помещений, метереологические условия [7] (температура воздуха, относительная влажность, скорость движения воздуха), результаты были сопоставлены по СанПин 0203-06. Органолептическая оценка температуры и влажности при изучении метереологических условий проведены с помощью движения воздуха при (18±2)ºС. Переработанный плавленый сыр хранится в течении 30 суток при температуре от 4ºС до 0ºСи относительной влажности не более 30% или притемпературе от 4ºС до 0ºС и относительной влажности не более 85% в течении 15 суток.

Выявление шума проведено по Гост 12.1.050-86, уровень шума и частотный спектр определены с помощью прибора «Шумомер Ш-63». Полученные результаты были оценены по СанПиН 0120-01«Санитарные нормы допустимых уровней шума на рабочих местах».

Плавление сыра оценено по составу и свойствам сырья и процесса плавления при температуре от 70ºС до 90ºС и ниже 95ºС в течении 10-15 минут, при нагревании через стенки при температуре 75ºС- не менее 20 минут. Оборудования и материалы для использования при производственном процессе соответствовали утвержденному стандарту Министерства здравохранения Республики Узбекистан [6].

Анализ полученных результатов показал, что обогащенный приправами и ароматизированными добавками переработанный сыр имеет высокие органолептические свойства, а также срок его хранения удлинён с 30 до 45дней. Имеет более длительный срок хранения [10.11,12].

Нормативные документы

Постановление Кабинета министров Республики Узбекистан от 7 июля 2017 года №476 Об утверждении Общего технического регламента о безопасности упаковки, контактирующей с пищевой продукцией

При выполнении измерений используют следующие средства измерений

- жиромеры (бутирометры) стеклянные исполнения 1-6, 1-7,1-40, 2-0,5, 2-1,0 по ГОСТ 23094;
- пробки резиновые для жиромеров;
- пипетки по ГОСТ 29169;
- группа резиновая;
- приборы (дозаторы) для измерения изоамиловой спирта и серной кислоты вместимостью соответственно 1-10 см^3 по ГОСТ 6859;
- центрифуга для измерения массовой доли жира;
- бани водяные, поддерживающие температуру 65 и 75^{0}С;
- прибор нагревательный для водяной бани;
- штатив для жиромеров;
- термометры ртутные стеклянные по ГОСТ 28498;
- весы лабораторные 4-класса по ГОСТ 21104;
- цилиндр 1-50, 1-100 по ГОСТ 1770;
- ареометр общего назначения по ГОСТ 18481;
- секундомер;
- шкаф сушильный;
- эксикатор по ГОСТ 25336;

-плитка электрическая по ГОСТ 14919;
- ступка фарфоровая;
- тёрка;
- стаканчик для взвешивания по ГОСТ 25336.

Отбор проб

Отбор и ввод пробы осуществляли при помощи пробоотборника и без предварительного нагревания пробы.

От плавленого сыра, упакованного в крупную тару, в качестве контролируемых мест отбирают и вскрывают 10% всего количества единиц упаковки, из каждой контролируемой единицы берут 1 брикет сыра или 1 батон колбасного сыра. От каждого брикета или батона сыра из разных мест отбирают по 20 г продукта в одну чистую сухую посуду. Брикет массой 30 г берут целиком. От колбасного сыра пробы отрезают в поперечном направлении на расстоянии не менее 5 см от края, снимают уплотнённый слой (2-3 мм) и помещают в одну чистую сухую посуду [8,9].

Отбор проб сыров в оригинальной упаковке производят отбор одной упаковки.

Пробы плавленых сыров измельчают ножом, перемешивают и выделяют для исследования средний образец около 50 г.

Подготовка пробы к анализу

Отобранную пробу сыра плавленого измельчают, помещают в фарфоровую ступку и тщательно перемешивают.

Колбу высушивают в шкафу сушильном в течении 45 минут, предварительно поместив в нее небольшое количество стеклянных шариков или кусочков фарфора. Затем колбу охлаждают в эксикаторе и взвешивают.

Непосредственно перед взвешиванием готовят смешанный растворитель из равных объёмов диэтилового и петролейного эфиров.

Около 2 г измельчённой пробы сыра и сырного продукта помещают в бюксу или на часовое стекло, взвешивают с отсчётом до 0,0001 г и переносят всухую плоскодонную колбу или экстракционную колбу.

Пробу сыра и сырного продукта для испытания допускается взвешивать на целлюлозной плёнке, которую затем складывают и вместе с пробой сыра помещают в колбу.

В колбу с испытуемой пробой наливают (9 $\pm$ 1) см^3 соляной кислоты и выдерживают её в кипящей водяной бане при постоянном встряхивании до тех пор, пока сыр и сырный продукт полностью не растворится. После этого колбу выдерживают в кипящей бане в течение 20 мин и охлаждают до температуры (20$\pm$2)^{0}С в холодной водопроводной воде.

Если обработку сыра и сырного продукта соляной кислотой проводят в экстракционной колбе, то в неё наливают 10 см^3 этилового спирта и осторожно тщательно перемешивают.

Если обработку сыра и сырного продукта соляной кислотой проводили в плоскодонной колбе, то обработанную соляной кислотой пробу переносят в экстракционную колбу, ополаскивая первоначальную ёмкость последовательно 10 см^3 этилового спирта, 25 см^{3}диэтилового эфира и 25 см^{3}петролейного эфира, собирая смывную жидкость в экстракционную колбу.

После внесения 25 см^{3}диэтилового эфира экстракционную колбу закрывают притертой пробкой, сильно встряхивают при постоянном переворачивании в течении 1 мин. Затем осторожно вынимают пробку и добавляют в колбу 25 см^{3}петролейного эфира, используя первые 5-10 см^3 для ополаскивания пробки и внутренней стороны горловины колбы. Затем закрывают колбу принтерной пробкой и встряхивают при постоянном переворачивании в течение 30 с.

Оставляют колбу в покое до тех пор, пока верхний слой жидкости не будет чистым и чётко отделённым от нижнего слоя. Если чёткое разделение слоёв не достигается, то жидкость центрифугируют, используя экстракционную колбу.

Вынимают пробку, ополаскивают её внутреннюю поверхность горловины колбы 5-10 см^3 смешанного растворителя так, чтобы он стекал в колбу. После этого верхний слой осторожно переносят путём декантации или при помощи сифонной трубки в плоскодонную колбу.

Если верхний слой переносят путём декантации, то для улучшения разделения слоёв можно внести небольшое количество воды.

Ополаскивают внешнюю и внутреннюю поверхность горловины колбы или кончик и нижнюю часть сифонной трубки 5-10 см^3 смешанного растворителя, при этом растворитель с внешней стороны горловины экстракционной колбы должен стекать в плоскодонную колбу, а с внутренней стороны в экстракционную колбу.

Проводят повторную экстракцию, повторяя описанные выше операции и добавляя при этом по 15 см^3 диэтилового и петролейного эфиров.

Третью экстракцию выполняют так же, как и вторую, только без ополаскивания колбы. Осторожно выпаривают или постепенно отгоняют из плоскодонной колбы максимальное количество растворителей, по мере удаления диэтилового и петролейного эфиров, повышая температуру водяной бани от (30 $\pm$ 2) до (60 $\pm$ 2)^{0}С.

После исчезновения запахов растворителей колбу нагревают, поместив её на 1 ч в сушильный шкаф. Затем охлаждают в эксикаторе до температуры (20 $\pm$ 2)^{0}С

И взвешивают с отсчётом до 0,0001 г.

Последующие взвешивания колбы проводят после высушивания в течение 30-60 мин до тех пор, пока разница в массе между последовательными взвешиваниями не будет более 0,001 г. В случае увеличения массы колбы с содержимым после повторного высушивания для расчёта берут результат предыдущего взвешивания.

Для проверки полноты растворения экстрагирования фракции в колбу добавляют (20 ± 5) см^{3}петролейного эфира, при этом колбу постепенно нагревают до температуры не выше 60^{0}С при постоянном перемешивании содержимого колбы круговыми движениями до полного растворения жира.

Если экстрагированная фракция не растворяется в петролейном эфире полностью, то содержание нерастворимого осадка определяют после удаления жира тёплым петролейным эфиром. Обработку эфиром повторяют не менее трёх раз. Перед каждой декантацией дают осесть на дно нерастворимому остатку. После полного удаления жира колбу с нерастворимым остатком подогревают в водяной бане, постепенно повышая её температуру от 30 до 60^{0}С с целью наиболее полного удаления петролейного эфира. После исчезновения запаха петролейного эфира колбу с не растворившимся остатком сушат в сушильном шкафу в течении 1 ч, охлаждают до температуры (20 ± 2)^{0}С и взвешивают с отсчётом до 0,0001 г.

Одновременно с определением массовой доли жира проводят контрольный опыт с 10 см^3 дистиллированной воды.

Если масса сухого остатка в колбе после высушивания превышает 0,0005 г, то реактивы следует проверить на чистоту или заменить.

Обработка результатов

Массовую долю жира X_4, %, в плавленом сыре вычисляют по формуле

$$X_4 = \frac{(m_1 - m_2) - (m_3 - m_4)}{m_0} \cdot 100,$$

где m_1 - масса колбы с жиром последнего взвешивания, г;

m_2 - масса пустой колбы или с сухим нерастворимым остатком, г;

m_3 - масса колбы после последнего взвешивания в контрольном опыте, г;

m_4 - масса пустой колбы или с сухим нерастворимым остатком в контрольном опыте, г;

m_0 -масса испытуемой пробы, г;

За окончательный результат испытания принимают среднеарифметическое значение результатов двух параллельных определений, расхождение между которыми не должно превышать 0,2%.

Предел допускаемой погрешности метода при доверительной вероятности 0,95 составляет 0,2%.

Заключение

По результатам исследования пришли к следующему заключению, применение новых товарных кодов на 20%-30% жирность продукта, исходя из важнейшего показателя качества плавленых сырных продуктов, жирности, позволит юридически защитить экономические отношения республики.

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COMPARATIVE ANALYSIS OF THE METHODS FOR SELECTING INFRASTRUCTURE PROJECTS IN THE EUROPEAN UNION AND THE USA (WITH CONCLUSIONS FOR UZBEKISTAN)

***Abstract**: the purpose of this article is to compare and analyze the methods and procedures for selecting infrastructure projects in the EU and the USA in order to suggest a framework that can be applied in Uzbekistan. There are few important infrastructure projects that were unsuccessful and one of the main reasons is the lack of the right methods of project selection in Uzbekistan. The article does the systematic analysis of the previous research to fulfill the goal of recommending the infrastructure selection method and the framework that can be applied in Uzbekistan.*

***Key words**: infrastructure, project selection methods, project selection procedure, Social-Cost-Benefit-Analysis (SCBA), Multi-Criteria-Decision-Analysis (MCDA), Infrastructure Prioritization Framework (IPF), Uzbekistan.*

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Introduction

During the social-economic development of Uzbekistan, building and investing in infrastructure is one of the most important topics. There is a significant improvement in the number of infrastructure projects and investments in Uzbekistan, which in return brings social-economic development. Uzbekistan's Development Strategy for 2017-2021 mentions that the growth of infrastructure is the backbone for the development of the country [1]. The Development strategy focuses on the development of social, tourism, road, and transport, storage, production, engineering, energy communications infrastructure projects. As the demand for building more infrastructure rises so does the need for more successful projects that will be sustainable.

The world invests some $2.5 trillion a year in infrastructure and this number must be at $ 15 trillion by 2040 to supply the population and continue developing. Therefore, the current investment is not enough to meet the increasing need of the residents for modern infrastructure facilities. Consequently, improving project selection, project delivery, and management of current assets could cut the spending by 40% [2]. Even the most advanced economies have a considerable need to learn from each other and to shape stronger competencies and formulate the best project management methods. A diligent evaluation that benchmarks each aspect of infrastructure development against global best practices can find the areas where a clear-cut change could produce significant results. That's also true for Uzbekistan

[1] Adolat (2017). 2017 – the year of sweeping reforms. (pp. 21–39) T.: Adolat

[2] Woetzel, Mischke, Garemo , Hjerpe , & Palter, *Bridging global infrastructure gaps* 2016

which could use such bench-marking for selection, delivery, and management of successful infrastructure projects.

The infrastructure projects usually cost a big amount of capital investment, the appropriate selection method for the infrastructure projects can support the investors and the government to prioritize and choose the projects that have a higher potential to be successful.

As there have been some cases in Uzbekistan where the projects have been approved and the infrastructure has been built but they have failed to be successful and sustainable. Such infrastructure projects will also damage the social-economic well-being of the residents in the area. One of the main reasons for such failure is the lack of reliable selection methods for infrastructure projects in Uzbekistan. The selection methods for such projects will influence the outcome of the project immensely. Thus, it is vital to analyze and apply the best practices used in the USA and the European Union and also learn from the drawbacks. Also, multiple projects are going on in the organization and they have a limited budget and have to sort out the projects that will bring significant benefits, and the project's objectives and organization's objectives are in line. **This signifies the importance** of comparative analysis of the methods for selecting infrastructure projects in the European Union and the USA so it can also be useful for Uzbekistan and contribute to the scientific and economic development of the country.

The degree of elaboration of the problem

The issues of methods for the selection of effective infrastructure projects have been widely studied by foreign researchers. Theoretical, methodological, and practical aspects of the selection methods for infrastructure projects have been analyzed in the scientific works of foreign researchers C.C. Dutra, J.L.D. Ribeiro, M.M. de Carvalho [3], Seng Hansen, Eric Too, Tiendung Le [4], S. Lindhard, S. Wandahl [5], Lifson, E.F. Shaifer [6], and others. However, no research has been found that is directly linked to the project selection methods by the Uzbek authors. Since it's a relatively new topic in the Uzbek research field, there is a significant gap for research.

However, in the available studies, insufficient attention has been paid to the issues of effectiveness of methods for the selection and prioritization of infrastructure projects and there is a need for the development of appropriate criteria and methods that can be used in Uzbekistan. Besides, several projects are going on in the organization and they have a limited budget, time, and resources so they have to sort out the projects that will bring significant benefits, and the project's objectives and organization's objectives are in line with each other. The need to solve theoretical, methodological, and organizational problems of forming a system for choosing the effective methods for selecting infrastructure projects determined the choice of the topic of the thesis, the setting of goals, objectives, logic, and structure of the study.

Literature review

Infrastructure is the fundamental systems and services, such as transport and power supplies, that a country or organization uses to function effectively [7], including the services and facilities necessary for its economy to work and prosper. Infrastructure includes buildings such as highways, railroads, bridges, tunnels, water supplies, sewers, electricity grids, and telecommunications. Infrastructure facilitates economic and social growth by offering services and transport to residents. Nowadays, more and more projects are being made and help the organization to achieve its strategic objectives. The terms 'project management' and 'project management maturity' are used widely in companies worldwide and recently they are also becoming trendy in Uzbekistan. The fast adoption of project management which is such a powerful tool has helped governments and companies to achieve their goals if that tool is used correctly. However, there have been many cases where this tool has been used incorrectly or was misapplied. According to several researchers [8], the speedy adoption of project management means:

- A lot of projects are not in line with the organization's main mission statement. For example, if providing affordable housing for the underprivileged is the main mission of the government's project but the project mentions the luxury materials and high-class design and more expensive amenities;
- Many projects are led but don't match the strategy and the goals of the organization;
- Many projects require excessive funding but their cost outweighs the benefit.

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[8] Cleland and King, 1983, p. 155

Project selection procedure in the EU

To analyze the selection methodology and models used for selecting the infrastructure projects we will focus on Projects of Common Interest (PCI) in the energy sector of the European Union. As the European commission factsheet informs "Projects of common interest (PCIs) are key infrastructure projects, which will help the Member States to physically integrate their energy markets, allow them to diversify their energy sources and help put an end to the energy isolation that some of them are facing. They are the primary European tool to accelerate the deployment of the infrastructure necessary for the completion of the European energy market and to ensure that the European Union meets its goals of affordable, secure and sustainable energy" [[9]].

The main requirements to become a 'project of common interest':

(1) Have a substantial impact on at minimum two EU Member Countries;

(2) improve market assimilation and contribute to the incorporation of Member States' systems;

(3) Upsurge competition on energy markets by giving alternatives to consumers;

(4) boost the safety of supply;

(5) Contribute to the EU energy and climate aims. The infrastructure object must integrate renewable energy sources.

The funding organizations and their selection methods and models:

a) Connecting Europe Facility (CEF) Grants: the grants are aimed at constructure and research projects that need financial help. **Objective cost-benefit analysis (CBA) will be used to determine the recipient of the grants.**

b) CEF Financial instruments: All PCIs can apply. Unlike grants, the management of the funds to be assigned as EU financial funding will not be done via calls for proposals **(tenders).**

c) European Fund for Strategic Investment (EFSI): it is worth at least € 315 billion and all PCI projects and other projects can apply. The methods that are used in project selection are MCDM and CBA.

d) European Structural and Investment Funds: EU members can apply to get funding for the critical energy infrastructure projects so the Member States can get funding of approx. €2 billion to enormous infrastructure projects under the European Regional Development Fund (ERDF). The methods that are used in project selection are MCDM (MCDA) and CBA.

Project selection procedure in the USA

To explain the project selection procedure, the guideline given by the Texas Department of Transportation (USA) has been taken. According to the Texas Department Of Transportation (USA), There are five typical steps in the project selection process: [[10]]

1. Finding the need

Each undertaking begins with a thought or need. The catalyst for a task can emerge out of quite a few sources at the network, state, or government level. When a need has been recognized, venture allies ordinarily approach TxDOT's nearby office or their neighborhood Metropolitan Planning Organization (MPO).

2. Financial Planning

From the get-go in the arranging cycle, the locale staff, and MPO staff when fitting, devise a subsidizing system for the proposed venture. The accessibility of financing is the main consideration in deciding if a venture is chosen.

3. Planning

When a project is upheld at the neighborhood level, it contends with comparable ventures for subsidizing. Since ventures are frequently financed through a mix of subsidizing classes at an assortment of power levels, subsidizing can be a mind-boggling task.

4. Project Development

Building a roadway, connect or other significant transportation improvement is an unpredictable, long haul measure that includes the cooperation of both transportation experts and the general population.

5. Construction

Development contracts are granted through a serious offering measure, and the least qualified offer is submitted to the commission for endorsement. After the honor of the agreement, development starts. When an undertaking is completely in progress, development oversight and upkeep are refined at the TxDOT region and neighborhood level.

Cost-Benefit Analysis of infrastructure projects

Maybe the most acknowledged strategy for Project assessment is Cost-Benefit Analysis (CBA). The handy improvement of Cost-Benefit Analysis began during the 1930s in the United States, generally for public speculation arranging at the government level, and has stayed a staple of the strategy of project selection [[11]]. This is to a great extent because CBA, while complex regarding inputs, is a genuinely clear idea, permitting examination of Projects dependent on a solitary measurement, adapted worth. CBA adds

[9] European commission (2015) Projects of common interest in energy - questions and answers. https://ec.europa.eu/commission/presscorner/detail/en/MEMO_15_6108

[10] Texas Department of Transportation (2013) https://ftp.txdot.gov/pub/txdot-info/fin/utp/2013_psp.pdf

[11] Zerbe and Bellas (2006), Cost-Benefit-Analsis. pp. 14-15

up to all expenses and advantages of an undertaking over its lifetime and limits future streams to compute Present Values. The (limited) Present Estimations of expenses and advantages are looked at, either by utilization of Net Present Value (positioning activities by most noteworthy NPV) or the Benefit-To-Cost Ratio (BCR) (used to reflect effective utilization of contributions for yields). A major guideline and key quality of CBA is that it permits leaders to naturally analyze different options dependent on a solitary marker, the venture's net worth [12].

CBA can be applied in conventional financial terms to the evaluation of alternative initiatives for a business, but it can also be expanded to the study of public spending by considering the full spectrum of (monetary and non-monetary) costs and benefits for the whole of society. In the Social Cost-Benefit Analysis (SCBA), prioritization is based on the selection of projects that optimize the net present values for society as a whole, without taking into consideration the individual 'winners' and 'losers' of alternative projects.

Past these discussions, there are several pragmatic and specialized issues identified with the mechanics of CBA. To begin with, tending to theoretical elements and vital concerns is troublesome with CBA. Regular methodology to set up adapted qualities for a few non-promoted factors is not applied to all non-estimated impacts [13]. These issues uncover potential for positive thinking predisposition or cost underestimation [14] and show the gap in research and analysis.

A subsequent issue identifies with the choice of a suitable markdown rate. Numerous examinations expect a standard rate to be applied to a nation and area, which without a doubt reduces the weight of assurance. Be that as it may, it is likewise known that even slight adjustments in such pace of return can significantly affect determined advantage cost proportions and net present values [15].

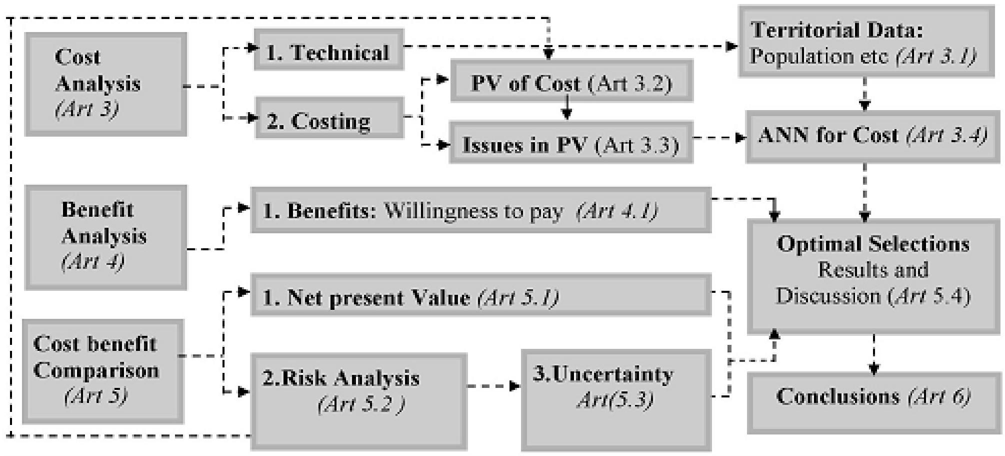

Figure 1. Cost-Benefit Analysis diagram.
Source: *Roy, K. & Thakur, B. & Konar, T. & Chakraborty, Shibnath. (2010). Rapid evaluation of water supply project feasibility in Kolkata, India. Drinking-Water Engineering and Science. 3. 10.5194/does-3-29-2010.*

Multi-Criteria Decision Analysis for infrastructure projects

Another arrangement of approaches that have picked up footing lately is the multicriteria examination. Writing investigation uncovers that numerous scientists utilize the Multiple Attribute Decision Making Methods (MADM) for venture choice. MADM likewise called Multi-Criteria Decision-Making (MCDM) is the most notable part of dynamic. Multi-Criteria Decision Approaches/Methods (MCDA/M) expect to formalize the incorporation of non-financial as well as subjective variables into the choice investigation. Sometimes, basic multi-rules techniques might be valuable options in contrast to CBA when data issues are normal or expository assets restricted.

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12 Thomopoulos, Nikolas & Grant-Muller, SM & Tight, Miles. (2009). Incorporating equity considerations in transport infrastructure evaluation: Current practice and a proposed methodology. Evaluation and program planning. 32. 351-9. 10.1016/j.evalprogplan.2009.06.013.

13 Dodgson, J & Spackman, Michael & Pearman, Alan & Phillips, Lawrence. (2009). Multi-Criteria Analysis: A Manual.

14 Cantarelli, Chantal & Flyvbjerg, Bent & Wee, Bert & Molin, Eric. (2010). Lock-In and Its Influence on the Project Performance of Large-Scale Transportation Infrastructure Projects: Investigating the Way in Which Lock-In Can Emerge and Affect Cost Overruns. Environment and Planning B Planning and Design. 37. 792-807. 10.1068/b36017.

15 Ramani, Tara & Zietsman, Josias & Knowles, & Quadrifoglio, Luca. (2011). Sustainability Enhancement Tool for State DOTs Using Performance Measurement. Journal of Transportation Engineering. 404-415.

In others, MCDMs are utilized to expand CBA. This turn in foundation advancement, furthermore, arranging is a reaction to worries about over-specialization, the possibility to downgrade basic social and ecological factors in CBA, the need to accommodate different framework related approach objectives, and viable restrictions on data.

Ravanshadnia, Rajaie, and Abbasian [16] apply MADM methods to propose an adapted model based on five steps to select the most appropriate candidate projects for bidding. The model is presented in Figure 2:

Figure 2. Ambiguous MADM project selection

Source: (adapted from Ravanshadnia, Rajaie & Abbasian, 2010, p. 1085)

The Infrastructure Prioritization Framework

The alternative approach to project selection was suggested by David Marcelo et al. (2016) [17] and the framework was named as Infrastructure Prioritization Method.

The system has been developed by the World Bank and has been implemented in many developing countries. The Infrastructure Prioritization Framework (IPF) is a decision support tool designed to help policymakers prioritize investment in infrastructure under scarce resources, multiple policy priorities, and ambiguity [18]. The IPF is a foundation to extend choice dependent on more advanced and broad financial investigations, advancing governments from specially appointed or political determination to more precise methodologies. The Infrastructure Prioritization Framework reacts to interest for efficient foundation choice help that is plausible inside the asset methods for government and consolidates the key choices factors for an administration and a given area. IPF is a quantitative, multi-measures way to deal with assessing proposed ventures as indicated by government-chose social, ecological, money related, and financial models.

In-country discussions with Panama, Vietnam, Peru, and Indonesia, the researchers found that line agencies and local government units offered projects to the central government (such as the Ministry of Finance) in big numbers to get financing. The proposed projects had to go through pre-screening and basic assessment but they did not always go through complete SCBA (Social-Cost-Benefit-Analysis) or MCDA analysis.

The result of the studies on IPF shows that:

1. IPF can help improve the quality of existing data and their comparability

2. To prevent possible bias, methods and protective mechanisms should be used

3. For the effective use of IPF, it is necessary to build capacity

4. IPF works best when it is embedded in the planning of infrastructure projects

Therefore, Uzbekistan must take the necessary step to implement the IPF framework when the government bodies and private sponsors are deciding on selecting the infrastructure projects.

Thus, in this research, we suggest the framework which can be suitable for prioritizing and selecting the best infrastructure projects in Uzbekistan:

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[16] Ravanshadnia, M., Rajaie, H. and Abbasian, H. (2010). Hybrid fuzzy MADM projectselection model for diversified construction companies. Canadian Journal of Civil Engineering, 37(8), pp.1082-1093.

[18] Darwin Marcelo, Cledan Mandri-Perrott, Schuyler House, Jordan Z. Schwartz World Bank PPP Group 14 April 2016. p 1.

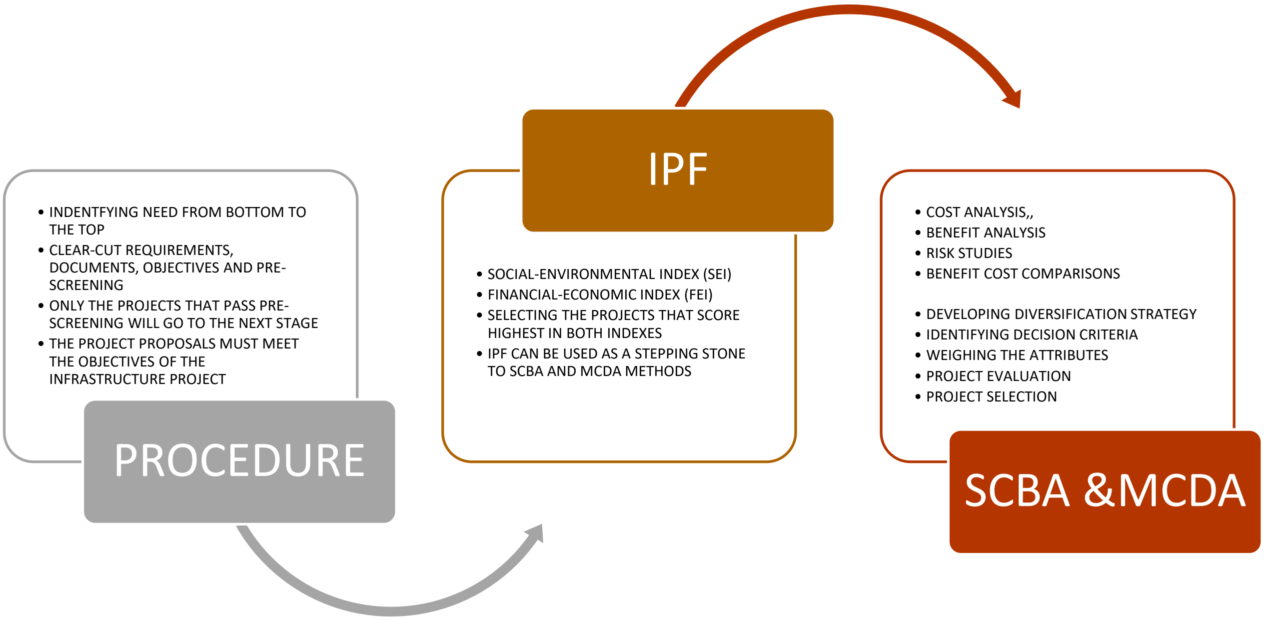

Figure 3. Proposed project selection framework for Uzbekistan.

From Figure 3 we can observe that firstly, the authorities and committees for infrastructure projects must focus on implementing the more effective procedure for participation and pre-screening of infrastructure projects. Instead of the top to bottom approach, it is more effective to have the bottom to top approach. Since the residents, local authorities, agencies, local specialists, and committees know more about the needs and requirements of the residents and the area. They could take an active part in identifying the need for infrastructure projects that will support both social and economic prosperity. The tenders need more transparency and clear-cut requirements, documents, the flow of selection procedure, and pre-screening. Pre-screening will help save time and resources and will support better decision making. After this stage, only the projects that meet the objectives of the project and the ones that are capable of delivering the project will be left. To continue these projects are evaluated using the IPF framework that is suitable to developing countries that lack the budget and have to choose among several projects. IPF can sort out the projects which have both high social-environmental index (SEI) and Financial-economic index (FEI) and it can be used as a stepping stone to SCBA and MCDA methods. Before using the SCBA and MCDA methods which require more budget, specialists, data, and time, IPF could be implemented as an alternative in Uzbekistan. This in return will prioritize the infrastructure projects which are highly likely to succeed and be sustainable.

Methodology

A systematic analysis of literature has been carried out in this research. In any discipline, the new research is based on previous knowledge so that it can offer new perspectives and findings. A literature review is widely described as a way of gathering and analyzing previous research.

A well-conducted literature review will help science and research to develop by providing new perspectives and bringing in new research frameworks [19] Some guidelines for conducting literature reviews suggest different types of reviews, such as narrative or integrative reviews [20].

A systematic literature review was conducted following the guidelines prescribed by Y. Le et al [21]

[19] Webster, Jane & Watson, Richard. (2002). Webster and Watson literature review. MIS Quarterly. 26.
[20] Pearson, M., Parkin, S. and Coomber, R. (2011). Generalizing Applied Qualitative Research on Harm Reduction: The Example of a Public Injecting Typology. Contemporary Drug Problems, 38(1), pp.61-91.
[21] Y. Le, M. Shan, A.P.C. Chan, Y. Hu, Overview of Corruption Research in Construction, J. Manage. Eng 30(4), 02514001 (2014)

and A.P.C. Chan et al [22] and Seng Hansen[23]. There are 5 steps in conducting the review and synthesis of the gathered data.

Searching for literature sources

The search for literature on the topic considered all the sources available to be more inclusive of all the findings and research that was done by the foreign and local researchers, policymakers, and more.

Selecting relevant literature

A pictorial examination was employed to go through articles and books. It was done by reading the abstracts and findings skimming the contents to identify important publications that are more associated with the research topic. A total of 30 publications were carefully chosen for further analysis.

Analyzing the content

The thematic content investigation was carried out to synthesize the content of the selected publications and to extract the relevant selection models and methods. It is a common approach in analyzing qualitative data [24]. Here, the selected publications were analysand and grouped based on common themes. It involves the procedure of data familiarization which includes the double reading of documents, the data coding, as well as theme discussion and reassessment [25].

Table 1 below gives an example of the initial outcome of the coding process.

Table 1. Example of the initial coding process

Cost-benefit-analysis (CBA)	Quality-Based Selection (QBS)
Multi-Criteria Decision-Making (MCDM)	
Infrastructure Prioritization Framework (IPF)	
Analytic Hierarchy Process (AHP)	
Societal Cost-Benefit Analysis (SCBA)	

At this stage, there might be many criteria that intersect with one another from various works of literature. A subsequent coding process must then be carried out where all relevant details and initial coding have been checked. This process is important to ensure that the general concept of the data as well as the relationships between them have been improved. In this case, certain codes have been changed and new codes have been added. An example of the updated codes from the subsequent coding process is shown in Table 2 below.

Table 2. Example of the subsequent coding process.

№	Selection method	Code
1	Cost-benefit-analysis	CBA
2	Infrastructure Prioritization Framework	IPF
3	Analytic Hierarchy Process	AHP
4	Societal Cost-Benefit Analysis	SCBA
5	Quality-Based Selection	QBS

After two coding processes, a synthesis of content analysis through an inductive process [26] was performed. The synthesis established the patterns, categories, and frameworks that answer the research question.

Reporting the Findings

Finally, the findings and recommendations were discussed concerning the research question raised in this research.

Conclusions and recommendations

It is imperative to identify the criteria for choosing the right selection method for the infrastructure as there are differences between policies, political and economic situations in each country. The method for selecting the infrastructure projects must be credible and flexible to meet the demands of the variety of project objectives. There is a strong need for the objectives of the stakeholders to be in line with the goals of the project delivery agency.

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[22] A.P.C. Chan, E.K. Owusu, Corruption forms in the construction industry: literature review, J. Constr. Eng. Manage 143(8), 04017057 (2017)

[23] Hansen, Seng & Too, Eric & Le, Tiendung. (2019). Criteria to consider in selecting and prioritizing infrastructure projects. MATEC Web of Conferences. 270. 06004. 10.1051/matecconf/201927006004.

[24] Bryman, E. Bell, Business Research Methods 4th Edition (Oxford University Press, New York, 2015)

[25] V. Braun, V. Clarke, Using Thematic Analysis in Psychology, Qual. Res. Psychol 3(2), 77 (2006)

[26] E.Z.H. Zheng, M.M. de Carvalho, Managing uncertainty in projects: a review, trends and gaps, GeP 7(2), 95 (2016)

Besides, it is vital to identify the need and the social and financial benefits that will be gained from the project. As the infrastructure project costs huge sums of capital, the proposed projects must go through pre-screening and a reliable method of selection that can weigh the potential benefits and risks. Rigorous screening of projects in the EU and the USA have supported the correct decision making and led to economic and social growth in the company. However, there is still a gap for improvement in the selection methods of infrastructure projects in the EU and the USA, they have strong foundation and framework that performs well even there are many project proposals that need to be sorted out. Lastly, it's always important to benchmark and learns from the developed countries and these countries can also learn from the developing ones that have taken these methods and made them even better.

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GIF (Australia)	= **0.564**	**ESJI** (KZ)	= **8.997**	**IBI** (India)	= **4.260**
JIF	= **1.500**	**SJIF** (Morocco)	= **5.667**	**OAJI** (USA)	= **0.350**

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OPPORTUNITIES OF DIGITAL PRODUCTION TO SUPPLY ARCTIC MILITARY SERVICES FOR THEIR EXECUTION OF THEIR OBLIGATIONS MESSAGE 1

Abstract*: In the article, the authors, using the software they have developed, confirm the possibility of using a package of materials for a reasonable choice of a package of materials in the manufacture of a suit for servicemen in the Arctic. Also, this opportunity guarantees servicemen comfortable conditions and the performance of their duties without prejudice to their health.*

Key words*: software product, package of materials, comfort, suit, accessories, convenience, time spent in an area with high temperatures, climatic chambers, thermal conductivity coefficient.*

Language*: English*

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Introduction

UDC 685.54: 519.14

Analysis of the existing mathematical models of the thermal state of a person under the influence of environmental parameters makes it possible to presumably determine the shape of the elements of the human body, which can be divided into the following sections: head - ball; arms, legs - cylinders; the torso is a set of elliptical cylinders - that's a rough approximation.

Thus, a person can be represented as a collection of geometric shapes.

The concept of mathematical formation of the foot is based on its representation for shoes as a set of multilayer packages of materials of various shapes and compositions. Using the 3D Studio MAX 5 program, a geometric image of a human foot was built.

Main part

The main factors affecting the temperature of the interior of the suit space when constructing a mathematical model are the ambient temperature, the heat generation of the human body, the thermophysical properties of the materials that make up the bags, the shape of these bags and the heat transfer from the outer surface of the suit to the environment.

The main criterion for a person's comfortable state is the value of the temperature of the inner suit space in the range from 21 to 25 ° C. At the same time, when a person is exposed to low temperatures, as a rule, perspiration of a person is not taken into account due to its small effect on the heat exchange process. At elevated ambient temperatures, the main role in maintaining a constant body temperature belongs to the skin, through which heat is transferred through radiation, conduction and evaporation. When the temperature of the surrounding air coincides with the temperature of the human body, heat transfer is carried out mainly due to perspiration (evaporation of 1 liter of water leads to a heat loss equal to 580 calories). Therefore, at high humidity and high air temperature, when evaporation of sweat is difficult, overheating of the human body most often occurs. Such cases occur when working in tight, unventilated clothing and, especially, in protective chemical suits. In this regard, it is very important to take into account sweating when designing a suit that provides the necessary time for a comfortable stay in high temperatures.

The indicators characterizing the thermal state of a person include body temperature, skin surface temperature and its topography, heat perception, the amount of sweat produced, the state of the cardiovascular system and the level of performance.

The human body temperature characterizes the process of thermoregulation of the body. It depends on the rate of heat loss, which, in turn, depends on the temperature and humidity of the air, the speed of its movement, the presence of thermal radiation and the heat-shielding properties of clothing. Performing work of categories Pb and III is accompanied by an increase in body temperature by 0.3 ... 0.5 ° C. When the body temperature rises by 1 ° C, the state of health begins to deteriorate, lethargy, irritability appear, the pulse and breathing become more frequent, attentiveness decreases, and the likelihood of accidents increases. At a temperature of 39 ° C, a person may faint.

The temperature of the skin of a person who is at rest in comfortable conditions is in the range of 32 ... 34 ° C. With an increase in air temperature, it also grows to 35 ° C, after which sweating occurs, limiting a further increase in skin temperature, although in some cases (especially with high air humidity) it can reach 36 ... 37 ° C. It was found that when the temperature difference in the central and peripheral parts of the body surface is less than 1.8 ° C, a person feels heat; 3 ... 5 ° C - comfort; more than 6 ° C - cold. As the air temperature rises, the difference between skin temperature in open and closed areas of the body also decreases.

The software product is written using applied mathematical packages MAPLE and is designed to calculate the distribution of temperature and partial pressure in the process of heat and mass transfer in the system "person - clothes - shoes - environment" for a flat package of materials, in the case when a person is in a climatic environment with high temperature.

Let us introduce the following notation:

T_c - ambient temperature (° C);

U_c - partial pressure of moisture vapor in the environment (mm Hg);

t - time (h);

x_i - coordinate i – th layer of the package (m), $l_{i\ 1} < x_i < l_i$;

$l_{i\ 1}; l_i$ - boundaries i – th layer of the package;

$T_i(x_i;t)$ - temperature i – th layer of the package (° C);

$U_i(x_i;t)$ - partial pressure of moisture vapor for i – th layer of the package (mm Hg);

$T_i(x_i;t) = T_i(x_i;t) \ \ T_c$ - relative temperature i – th layer of the package (° C);

$U_i(x_i;t) = U_i(x_i;t) \ \ U_c$ - relative partial pressure of moisture vapor for i – th layer of the package (mm Hg);

λ_i - coefficient of thermal conductivity i – th layer of the package (W / (m · ° C));

d_i - vapor permeability coefficient i – th layer of the package (kg / (m · h · mm Hg));

$a_{11}(i)$ - thermal diffusivity i – th layer of the package (m2 / h);

$a_{22}(i)$ - vapor diffusion coefficient i – th layer of the package (m2 / h);

$a_{12}(i)$ - diffuse thermal conductivity coefficient i – th layer of the package (m2 / h);

$a_{21}(i)$ - vapor thermal diffusion coefficient i – th layer of the package (m2 / h);

$q(t)$ - heat flux density of the foot (W / m²);

$M(t)$ - the flow density of the mass of moisture released by the human body (kg / (m2 · h));

α - heat transfer coefficient (W / (m2 · ° C));

β - mass transfer coefficient (kg / (m2 · h · mm Hg));

The system of equations for describing the process of heat and mass transfer in the system "man - clothes - shoes - environment" has the following form

$$\frac{\partial T_i}{\partial t} = a_{11}(i)\frac{\partial^2 T_i}{\partial x_i^2} + a_{12}(i)\frac{\partial^2 U_i}{\partial x_i^2};$$

$$\frac{\partial U_i}{\partial t} = a_{21}(i)\frac{\partial^2 T_i}{\partial x_i^2} + a_{22}(i)\frac{\partial^2 U_i}{\partial x_i^2},\ i = 1,2,\ldots n\ldots$$

The following boundary conditions are considered.

The heat flux of the human body entering the inner surface of the suit is $q(t)$

$$\lambda_1 \frac{\partial T_1}{\partial x_1}(0,t) + q(t) = 0;$$

The flux density of the mass of moisture released by the human body is $M(t)$

$$d_1 \frac{\partial U_1}{\partial x_1}(0,t) + M(t) = 0;$$

Heat transfer on the surface of the suit occurs according to Newton's law

$$\lambda_n \frac{\partial T_n}{\partial x_n}(l_n,t) + \alpha T_n(l_n,t) = 0;$$

The sole of the suit is waterproof, which is expressed on its inner surface by the equality:

$$\frac{\partial U_n}{\partial x_n}(l_{n\ 1},t) = 0;$$

ideal contact is assumed between the layers of the bottom of the shoe, which is expressed by the mating conditions at the joints:

$$T_{i\ 1}(l_{i\ 1},t) = T_i(l_{i\ 1},t),$$

$$\lambda_{i\ 1}\frac{\partial T_{i\ 1}}{\partial x_{i\ 1}}(l_{i\ 1},t) = \lambda_i \frac{\partial T_i}{\partial x_i}(l_{i\ 1},t),\ i = 2,\ldots n,$$

$$U_{i\ 1}(l_{i\ 1},t) = U_i(l_{i\ 1},t),$$

$$d_{i\ 1}\frac{\partial U_{i\ 1}}{\partial x_{i\ 1}}(l_{i\ 1},t) = d_i \frac{\partial U_i}{\partial x_i}(l_{i\ 1},t),\ i = 2,\ldots n\ldots$$

Initial conditions:

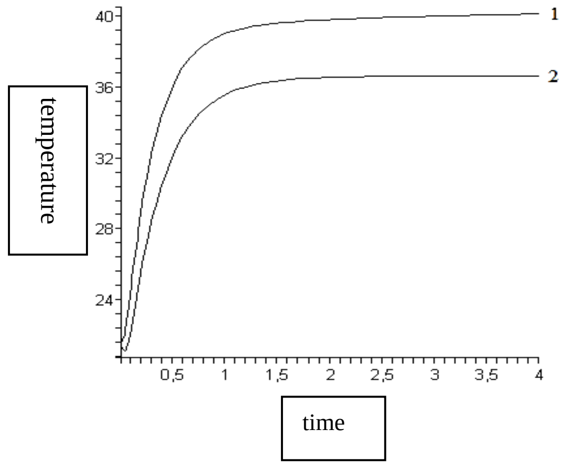
$$T_i(x_i,0) = f_i(x_i)\ U_i(x_i,0) = g_i(x_i)\ \ i = 1,2,\ldots n$$

As an example, consider the theoretical calculation of heat and mass transfer through the sole of a shoe at an elevated ambient temperature of 40 ° C. The characteristics of the package of materials for the bottom of the shoes are shown in table 1.

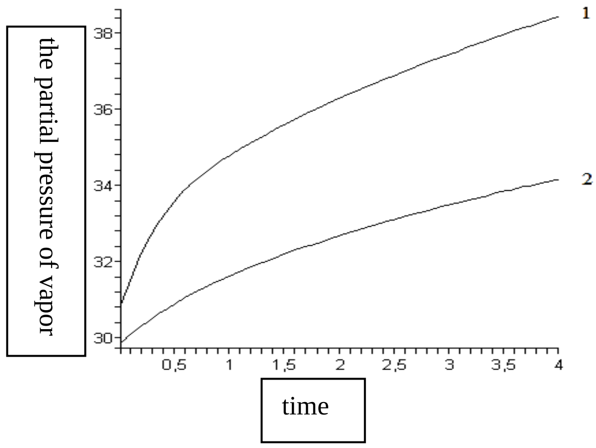
Table 1 - Characteristics of the package of materials for the bottom of the shoe

Layer no.	Layer material	Layer thickness (mm)
1	Cotton sock	2
2	insole	5
3	cardboard	1.8
4	sole	10

The heat flux density of the foot is 10 W / m2, the density of the mass of moisture emitted by the foot is 0.02 ((kg / (m2 · h)). The results of calculations of changes in temperature and partial pressure of vapors of the intra-shoe space are shown in Figures 1 and 2, on of which curve 1 - for bags of materials for the bottom of shoes used as a sole non-porous waterproof rubber; and curve 2 - for a package of materials for the bottom of shoes, when a material made by nanotechnology and having the ability to ventilate, i.e. to air exchange in the shoe space.



a



b

Figure: 2. Characteristics of the shoe space:
***a*- temperature**
***b* - partial vapor pressure Conclusion**

Thus, the development of a software product for the formation of comfortable conditions for a person when he is in a climatic environment with an elevated temperature will for the first time make it possible to make a reasonable choice of a package of materials for a suit in order to realize these very conditions of comfort and significantly improve working conditions for a person in extreme conditions.

If the software for justifying the choice of packages of materials for clothing and footwear in the formation of comfortable conditions for a person who is in climatic zones with a low temperature is due to control over a decrease in the temperature of the inner suit space to 21 ° C for the foot and to 31 ° C for the human body, which were into the developed software with a reasonable choice of a package of materials taking into account thermophysical characteristics, then when developing software for a reasonable choice of packages of materials for a person in climatic zones with elevated temperatures, the problem was solved differently, namely, based on the need to control to prevent an increase in body temperature person.

This is due to the fact that an increase of 0.3-0.5 C already forms a person's discomfort, and with an increase over 1 C, this excludes his being in these conditions. Consequently, packages of materials and a suit made of them must guarantee a person the fulfillment of these requirements during the entire time he is in these conditions.

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POSSIBILITIES OF DIGITAL PRODUCTION TO SUPPLY ARCTIC MILITARY SERVICES FOR THEIR EXECUTION OF THEIR OBLIGATIONS MESSAGE 2

***Abstract**: In the article, the authors, using the software they have developed, confirm the possibility of using a package of materials for a reasonable choice of a package of materials in the manufacture of a suit for servicemen in the Arctic. Also, this opportunity guarantees servicemen comfortable conditions and the performance of their duties without prejudice to their health.*

***Key words**: software product, package of materials, comfort, suit, accessories, convenience, time spent in an area with high temperatures, climatic chambers, thermal conductivity coefficient.*

***Language**: English*

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Introduction

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Politics has always been understood by everyone as activities in the interests of the state. Political responsibility in a democratically organized society is the highest expression of professionalism. Failure to fulfill political promises and statements - indicates either an inability to engage in politics, or the use of political governance for private interests. 85 years ago, what was obvious to consciousness was so in practice. In vain, speaking about the cruelty of I.V. Stalin, they forget that every mistake in politics affects the position of the people, and not politicians, managers, consultants, advisers.

Main part

Economic science arose and developed in the context of politics, like political economy. Today, economists in politics are guided not by political economy, but by economics in politics. Instead of investing in the development of production, they hide money in foreign banks, cut funding for education and self-education, increase the number of the poor, do not index pensions, refuse to help farmers, etc. "Manilov" nineties were replaced by "buns" of the tenths of the XXI century.

There is no progress without retreats, slowdowns in movement, recessions. The policy is designed to take active, purposeful actions to help overcome the obstacles arising in development. Politicians must stay ahead of the economic movement and direct it, stimulate domestic economic factors with political levers, and clear economic paths to efficient production. Instead, politicians continue to link development plans to the price of oil, the ruble size of the European and American currencies, referring to the integration trends in the world and globalization.

Integration of transnational relations is an objective reality, but for all its objectivity, it does not deny the specifics of national economic advancement. Moreover, integration is objectively designed to promote national development. Why doesn't it work out as it should be? This question arises from a logical comparison of the policy in the field of strengthening the defense capability, the restoration of the country's international authority in the most difficult circumstances of the formation of a new world architectonics with the fact that from year to year Russians observe and fully feel on themselves in the sphere of the rest of the economy. two governments? The second one "steps on the gas and brakes" at the same time.

The protracted recession in the Russian economy can be explained in two ways. The first is that the people have lost the ability to work well, squandered "human capital", and the second is that the managers are helpless. The media assure that politicians know their business, keep events under control, take the necessary measures and promise changes for the better in the near future. Therefore, the reason is the poor performance of the performers and the unfavorable world situation.

How naive does one need to be in order to rely on the sincerity, disinterestedness, and sympathy of competitors when planning economic policy? The President of the Russian Federation stated long ago that our Western partners do not want to strengthen Russia, they need an obedient Russia, such as the Baltic republics that were previously part of the USSR. I didn’t want to grieve the politicians responsible for the economy, but following Aristotle, we were forced to state: “Friends in the East are also on their minds” - in the sense of “Plato is my friend, but the truth is dearer”. They will help us as we benefit from such assistance.

It's time to understand that all economic and political alliances in the modern world space are an attempt to achieve national gain in the environment of transnational relations, i.e. you can count on partners as long as this cooperation is beneficial to them. From which the conclusion follows - it is necessary to face your economy. Only in this way, albeit with great tension, will it be possible to solve their problems. For example, there are no such objective reasons that would justify the decline in production in light industry for a quarter of a century.

The problems of agriculture and light industry are not specific, they have always been political. Farmers in the USA and Europe have many of our problems. The difference is that the farmer there is a national problem among the most important and basic. Its consideration is relevant for the existence of politicians. From how the policy contributes to the resolution, the public place of the politician is assessed. The farmer and the politician are linked by economic policy. They are balancing on one tightrope of economic viability.

There is nothing similar in Russia. Let us recall the history of the last ministers of agriculture. In the USSR, there was a Ministry of Light Industry, which emphasized the importance of the industry. What prevents, in the context of import substitution and declarations of the importance of developing our own production, to restore equality in industrial management. A "chintz land" without light industry is the same as native nature without birch groves or lyric poetry without the creativity of S. Yesenin.

The reformers of the 1990s were the least concerned about the fate of the Fatherland and the country's industrial identity. They built their business around the ease of maximizing profits and placed the walrus away from their ancestral lands. Light industry has traditionally been a difficult management problem. Managers must be, first of all, patriots, otherwise light industry cannot be raised. It is also necessary to understand the national importance of “long money”. Resilience of demand would compensate for the difficulties.

What is the essence of the ineffectiveness of politics in the economy at the end of the last century and the beginning of the new century? This is question number 1, and it is not so much about who is to blame. We are interested in the essence of the political paradigm developed by those who were "at the helm". Question number 2 - what should be changed and how, apparently, should it be done in order to raise the national industry, the production of clothes, footwear, leather goods, textiles, accessories, not least?

The answer to question number 1 is simple - no one was going to develop a paradigm of economic policy aimed at a radical transformation of the basis. It was decided to choose the method of reforming (not without outside help) from ready-made samples. It was proposed to take the Swedish experience, the Polish "shock therapy", reforms in Portugal and Argentina as a model. Such innovators, courageous scientists, wise organizers as Gaidar, Chubais, Koch, Burbulis did not come up with the idea with which a responsible owner usually begins - what I have in order to copy something.

Politics is not done depending on the state of feelings - either like or not like the level of everyday perception of the world. It is harmful to be in the "political kitchen" with such an approach. Economic policy does not qualify as "good" or "bad", "effective" or "ineffective". It has the right to be called either "useful" or "harmful". The price of such a policy is too high, and accordingly the responsibility is not limited to the professional form. Politics is politics. It is anti-political and unprofessional to turn politics into a source of one's own income.

Whatever the economic situation develops, it is extremely dangerous to make the meaning of economic criteria absolute, to endow them with the property of universality. F. Engels sharply spoke out against attempts to reduce the teaching of Karl Marx about social development to "economic materialism", "economic determinism." The economic basis is the basis of social organization, but by no means the system-forming factor of its improvement.

The most difficult component of economic reforms is the achievement of social satisfaction with the distribution of the national product. The health of society depends on this satisfaction, and not on the form of ownership. And we have come to an important conclusion - the quality of reforms is assessed not by the changes themselves, but by the ability to impart features of stability to public life.

Integration, globalization is not a panacea for development. They do not cancel the competitive struggle, in which there are more than one winner. There are more losers. Hence the relevance of the old truth, the meaning of which became clear in dialectics. Movement in any conditions becomes self-movement. The Chinese closed themselves off rationally and won. The victory was ensured by the Eastern caution and skepticism about the unification. They realized before us that integration and globalization are types of "pyramids" and are conditionally useful for national development. From the outside it might seem that the Chinese reformers have abandoned the curse mentality: "to live for you in times of change." From the inside, everything looked traditional - politicians did not betray with a sharp movement on a national scale, they were in a hurry, but with the constant linking of actions to the state economic order, reforms in the economy subordinated traditional political dominants, did not repent and did not try to please. Nobody seriously thought about any economic shocks. They took finance as the circulatory system of the economic organism into "tight government gloves", introduced tougher measures for economic and corruption crimes, equating many of them with dangerous actions against the state, did not invent new parties - they updated the existing one, as before, paid special attention to personnel policy. The Chinese took into account the Soviet party experience of "growing" personnel, which was based on the principle of progressive advancement depending on business efficiency and lifestyle.

The market for the light industry is also growing due to socio-cultural progress, in particular, due to the development of professional sports, an increase in the demand for those who choose sports as a path to a healthy lifestyle. At the end of 2020, the newspaper "Sportexpress" published an interview with the Chairman of the Board of the Russian Outdoor Group A. Grebtsov. "The outdoor market caters to mountaineering, tourism, extreme sports, special forces, rescue teams, polar services and troops. These are areas that require heavy-duty, frost-resistant, waterproof equipment that meets the latest world standards of safety and comfort. " A. Grebtsov gave interesting details, in particular, he compared the technological base for the production of quality products in the Russian Federation, Europe and Asia. We are "somewhat behind", according to him, from the Asian potential, but with Europe "We can definitely compete ... in Russia there are about 30 (!) Enterprises that can sew well." After the introduction of the import ban for state orders and state defense orders, the share of materials from the member countries of the Customs Union supplied to the country's law enforcement agencies increased from 30% in 2017 to 93% in 2020. In 2020, the tendency for an increase in the share of materials produced by the KPES countries used for the production of clothing should be about 90-95%. The turn of the state order towards domestic production will open up opportunities for the subcontractors of the chemical industry (raw materials for yarn, accessories, membranes, insulation). Will increase the production of fabric, tailoring, which will pull the development of equipment. D. Manturov believes that it is important to consolidate the achieved results:

- make it clear to large retail chains the importance of purchasing and placing goods produced in Russia, of course, taking into account their proper quality;
- place, first of all, orders for production from those "who have already got on their feet and know how to sew." They were able to prove their worth;
- provide assistance to enterprises with obtaining European certification, otherwise foreign firms will not be interested in them, and the goods produced in our country will not get to the West;
- actively support enterprises by providing them with collective stands at international exhibitions;

- provide such enterprises with subsidies for loans for the purchase of raw materials and supplies. The share of these loans in the total volume of lending should be from 50 to 85%;
- to exempt modern imported equipment from import duties and VAT, such as equipment used in sewing shops, is 90% imported;
- introduce preferential leasing.

As you can see, D. Manturov's program systematizes the main and primary steps towards the light industry to return it to its former importance. However, Heraclitus was right in saying that you cannot enter the same river twice. The rise of the light industry can be carried out on a new technological, economic and legal basis.

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POSSIBILITIES OF DIGITAL PRODUCTION TO SUPPLY ARCTIC MILITARY SERVICES FOR THEIR EXECUTION OF THEIR DUTIES MESSAGE 3

Abstract*: In the article, the authors, using the software they have developed, confirm the possibility of using a package of materials for a reasonable choice of a package of materials in the manufacture of a suit for servicemen in the Arctic. Also, this opportunity guarantees servicemen comfortable conditions and the performance of their duties without prejudice to their health.*

Key words*: software product, package of materials, comfort, suit, accessories, convenience, time spent in an area with high temperatures, climatic chambers, thermal conductivity coefficient.*

Language*: English*

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Introduction

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The manufacturer is currently not interested in making a quality product. "The sheepskin is not worth the dressing" - the costs are high, the cost of goods will rise, the real price will be significantly increased by the intermediary and the seller. As a result, the market for such a product "will not digest" and the manufacturer will be stricken with the fatal disease No. 1 according to E. Deming. On a limited - obviously scanty for Russia - scale, high-quality things are guaranteed to be made, manufactured, but this practice has nothing to do with the situation in production, it is exclusive.

The first experience of control intervention in the production process in order to give it stability and a certain increment can be found in the activities of shops, individual industries, schools of craftsmen. Most of the famous sculptors of the Renaissance tried to work in teams of stonecutters, directly in the places of extraction of the material. They were looking in the quarries for the texture needed to create the image. It was then that the joke appeared: it's easy to make a masterpiece - you need to remove all unnecessary, unnecessary, but first you need to find the basis. In the workshops, in the interests of quality, the craftsmen carefully checked the products, watched the work of the apprentices during the manufacturing process, actively introduced the students to the secrets of production, selecting the most capable of them. Despite the fact that each product was individual, made by a master, it passed internal control, which was also external from the city shop organizations. Subsequently, such work was defined as the rejection phase.

In terms of content, it was much richer, synthetic, more like “sampling” than “culling”. Creativity moved the masters, the masters studied no less than the students. They were looking for paint, primer, base, perfect images and ... they were wrong. Creativity spares no one - neither the greats nor the beginners. Everyone, especially the masters, had to work with the stick method. The concept of "marriage" is not as simple as it seems from the outside. The marriage is not always in plain sight, the masters were taken out by its hidden forms, which appear over time. Culling was not an act as in mass production, but a technology. Today it is difficult for us to look beyond the achieved horizon in the development of mass production. It is only clear that its “prudent” form is still more a direction of development than a phase. However, the logic of progress, built on continuity, does not exclude a return to some part characteristic of the shop organization. Mass character should not be a brake on creativity. Over time, it will surely reveal its diversity under the common “roof” of multiple results. Therefore, you should carefully study the production process, which has been improved in the workshop form.

Main part

Modern culling as an act of standardization dates back to the last quarter of the 19th century. The experience of S. Colt plants is recognized as the beginning, it is believed that the idea of "standard quality" was born there. If we evaluate in the system of our version "quality - standard", then this was a subconscious embodiment of Hegel's conclusion about the dialectics of the ascent of cognition from the abstract concept of quality to the concrete concept of the "standard" of product quality.

S. Colt's assembly went without preliminary fitting of parts. Specially trained inspectors performed pre-calibration and rejected substandard ones, thereby speeding up the main - assembly part of production. The experience of S. Colt at the beginning of the next century was developed in the automobile production of G. Ford and G. Leland ("Cadillac"). G. Ford, introducing conveyor assembly, removed the control of components from the conveyor, logically considering that such work should be done earlier. As a result, the “input control” of compliance with the standard calibers was replaced by “output control” at the adjacent production, which cleared the main production of defects and made it qualitatively cleaner.

Further, the process of standardization went through the improvement of what had been achieved; theorists F. Taylor, A. Fayol., M. Weber joined it. In alliance with managers, they identified the basic principles of a scientific approach to organizing mass production: a systematic approach to management; personnel management; delegation of responsibility; scientific rationing of labor. The developed production management system went down in history as the Ford-Taylor production system. Having indisputable advantages, the Ford-Taylor system also contained serious defects, which for a long time "dormant" in its potential. The development of production in the new socio-political conditions, the activation of social democratic interests inevitably pushed the Ford-Taylor system into a dead end. This was also facilitated by technological progress, the process of transforming scientific knowledge into a direct productive force. The desire by all means to implement the principle of not allowing defective products to reach the consumer could not help but lead production into a technological, structural crisis.

This was also driven by the lack of a clear understanding of quality and standard in management theory. They were changed instead of being considered in development. The most noticeable and sensitive was the identification of quality and standard in the production of consumer goods, where the concept of product quality reflects the dualistic nature of the product.

A product intended for subjective, more precisely, subjective use by a person or a social group must be objectively, physically and subjectively of high quality, and satisfy the consumer with its physical quality. It is naive to believe that only by advertising the physical perfection of a product can a consumer be attracted to it. Such a consumer should be subjectively none. Interest in the physical quality of a product can be formed by demonstrating its capabilities, but in order for interest to form into a need to buy it, this is not enough. The product should captivate the feelings of the buyer, and this is an irrational process, deeply intimate in nature, expressing the individuality of the consumer. Especially if the consumer is involved in a significant assortment, picky and fastidious.

The quality of consumer goods is not reducible to a system of physical parameters, but in their quality it exists as a kind of core. And just as the atom is not limited to the presence of a nucleus, so the quality of such goods is not limited by the system of physical characteristics. On the contrary, the standard is a purely physical phenomenon and requires a clear description in physical units. One should go to the concept of “quality of a product” through the market, and the “standard of a product” should be defined in terms of scientific and technical creativity.

Subconsciously, we came to the differentiation of the concepts of “quality” and “standard” by the end of the first quarter of the 20th century, when they felt the insidiousness of the absolutization of control over the standard conformity of products. In high-tech, complex production, the share of controllers has exceeded one third of those employed at the enterprise, which significantly increased the load on the cost of goods. The price has increased, but the quality has not improved according to the price increase. The buyer had to pay for the previous level of guarantees. Quality began to slow down production efficiency. In fact, the tension was between standardization and efficiency. It was necessary to think about how to improve the physical model of the standard - about new materials, original constructive and technological solutions. Standard is a technical image of the quality of a product. And just as the quality of a product, described by words, depends on knowledge and the ability to use them, the standard is determined by the possibilities of technical modeling of the concept of quality. The understanding of quality is evolving, and the technical model of the quality standard is also changing. Thinking has its own language and technical creativity has its own language, designed to serve as a translator from a scientific language into a technical, understandable production. At the same time, the translator must have a good sense of the organizational and technological capabilities of production, so as not to absolutize the meaning of the idealized model. The image of a model is significant when it fits into the image of production, otherwise the above situation will arise. Good intentions will lead the organization of production to a hellish state.

When the desire for the totality of the organization of quality control came into conflict with the total goal of increasing production efficiency and it became clear that the conflict could not be resolved in the same way, V. Schukhert, who worked in the technical control department of the American company Western Electric, proposed to shift the focus of management quality to organize the dynamics of the production process. V. Schukhert's innovation consisted in the fact that he looked at production and the quality of production as a movement and in this context understood the main thing as a movement: firstly, the achievement of stability, and secondly, the inevitability of deviations from the direction of movement.

The task of achieving high-quality production acquired a technical form and meaning by V. Schukhert: it is impossible to avoid variations in the parameters of the obtained quality of products, one must strive to reduce variations. The quality criterion is the stability of production in a static sense, that is, the convergence of variations with the central line. One of the most important factors in solving the problem V. Schukhert called the restructuring of personal interaction - cooperation, team organization. V. Schukhert was the first to approach the interpretation of the standard in terms of mass production, presenting the quality of production and goods as a statistical form that presupposes a certain fluctuation, which is called tolerance. V. Schukhert did not introduce the concept of a statistical model of a standard, but it was necessarily formed on the basis of his innovative ideas. V. Schukhert tried to give quality management a human face. He emphasized the importance of internal, including personal, motivation. But he did not strive to radically change the position of the worker in production. The alienation of the individual remained fundamentally the same, so the motivation was supported mainly by the financial assessment of the activity. Researchers of V. Schukhert's experience clearly overestimated its content, introducing into the characteristics such a reaction of workers as “the joy of getting results”; “Enjoyment of teamwork, recognition by colleagues and management”; “Feeling of importance”, etc. It was more adequate to say that V. Schukhert's method forced managers to learn what is called humanitarian knowledge, which guarantees producers effective results of their work at their enterprises. The reformers of the 1990s were the least worried about the fate of the Fatherland and domestic industrial originality. They built their business around the ease of maximizing profits and placed the walrus away from their ancestral lands. Light industry has traditionally been a difficult management problem. Managers must be, first of all, patriots, otherwise light industry cannot be raised. It is also necessary to understand the national importance of “long money”. Resilience of demand would compensate for the difficulties.

What is the essence of the ineffectiveness of politics in the economy at the end of the last century and the beginning of the new century? This is question number 1, and it is not so much about who is to blame. We are interested in the essence of the political paradigm developed by those who were "at the helm". Question number 2 - what should be changed and how, apparently, should it be done in order to raise the national industry, the production of clothes, footwear, leather goods, textiles, accessories, not least?

The answer to question number 1 is simple - no one was going to develop a paradigm of economic policy aimed at a radical transformation of the basis. It was decided to choose the method of reforming (not without outside help) from ready-made samples. It was proposed to take the Swedish experience, the Polish "shock therapy", reforms in Portugal and Argentina as a model. Such innovators, brave scientists, wise organizers as Gaidar, Chubais, Koch, Burbulis did not come up with the idea with which a responsible owner usually begins - what I have in order to copy something.

The most difficult component of economic reforms is the achievement of social satisfaction with the distribution of the national product. The health of society depends on this satisfaction, and not on the form of ownership. And we have come to an important conclusion - the quality of reforms is assessed not by the changes themselves, but by the ability to impart features of stability to public life.

In such conditions, it is time to abandon the abstract political ideals of dem-reformers and to work out a roadmap for the revival of the light industry, counting on the fact that the crisis emphasizes the relevance of the rationality of brainstorming as opposed to the “economic schools” in the trend. What kind of "map" is this, based on the historical experience of the 20th century, when all the main events took place:

- the priority should be consistently the interests of national advancement. I would very much like to say about the development, however, it cannot be received on a national scale now;
- the rate on the full support of the light industry, like most areas of investment of public funds (financial, legal, political, humanitarian), contains a risk, but within the limits of acceptable values;
- the creative potential of specialists is still high. He is quite competitive;
- make it clear to large retail chains the importance of purchasing and placing goods produced in Russia, of course, taking into account their proper quality;
- place, first of all, orders for production from those "who have already got on their feet and know how to sew." They have proven their worth;
- assist companies in obtaining European certification of materials, otherwise foreign companies will not be interested in them, and the goods produced in our country will not get to the West;
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- to exempt modern imported equipment from import duties and VAT. The machines used in the sewing shops are 90% imported;
- introduce preferential leasing.

Conclusion

The wise Buddha laid down four key steps in the eightfold path: correct understanding; making the right decision; finding the right words and, finally, the right actions to implement the right decisions. The fate of the light industry now depends on what this last step will be. Its execution is the function of the Government. The political paradigm is extremely simple - we should not compete with anyone in the fight for the world market, especially with the Chinese. The Chinese rightfully want to shoe and dress the whole world. One fifth of the world's population lives in the PRC. Our task is completely different. We need to make sure that the Chinese do not put shoes or clothe us. To transfer purchasing demand to our own Russian production, to interest in goods produced in the country. We are quite capable of such a task, as the manufacturers say. And the Government needs to do its direct work consistently and in a timely manner, and not deceive the public in the light industry, as happened with the sewing of school clothes.

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MIGRATING FROM REST TO GRAPHQL HAVING LONG-TERM SUPPORTED CLIENTS

***Abstract**: This article describes a concept of a new approach in API architecture. The article also contains an analysis of some existing architectural styles and technologies and compares them to this new approach.*

***Key words**: API architecture, GraphQL, REST.*

***Language**: English*

***Citation**: Kozhevnikov, V. A., & Shergalis, D. V. (2021). Migrating from rest to graphql having long-term supported clients. *ISJ Theoretical & Applied Science, 01 (93),* 180-185.

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Introduction

Such technologies as SOAP (Simple Object Access Protocol) and REST (Representative State Transfer) have been the main architectural approaches for data exchange. The obvious difference is the way data is encoded. In the case of SOAP, the only supported format is XML. While REST does not define the format, so developer can transmit JSON, HTML, XML and binary data. Each approach has its own advantages and disadvantages, but REST is the priority choice for modern developers due to the lightness and better readability of the JSON format, flexibility and ease of use, especially in web development [1].

However, when working with REST, developers also face certain limitations and disadvantages. The main ones are the so-called over fetching and under fetching, when, in response to a request, the REST client receives extra data, or vice versa, an insufficient amount of it, so client needs to perform another request. This often happens due to changes in application design or functionality. In case of insufficient data, the back-end developer has to modify the code to add the required data, while cases of redundancy are often ignored. The problem is aggravated, when there are different types of clients – for example, Android, iOS and web applications.

The need for small changes on the server side slows down the development process. As one of the approaches to solve the problem, Facebook created for internal use the GraphQL query language, which allows developers on the client side to select the data they need using a special query language [2].

After the specification was published, developers became interested in a new flexible approach, but faced a number of obstacles when trying to implement this technology in the systems they are developing [3]. The main ones were:

- the inability to upgrade existing versions of mobile and desktop applications to use GraphQL;
- the need to maintain both protocols during the process of migration [4];
- developers of client applications are unwilling to learn and implement new technology.

To solve these problems, the author suggests creating a service that will become an intermediary between the GraphQL server and the REST client. The author expects this can solve the listed problems, and also have additional advantages, compared to using each technology separately.

The aim of the article

The purpose of this work is to study the possibility and reasonability of creating the service described earlier. To do this, we need to compare GraphQL to other architectures and protocols, then make a conclusion about the feasibility of development of such technology, based on a comparison of approaches and the expected usability.

Benefits of GraphQL in compare to REST

Some of the benefits obtained by using GraphQL have already been listed in the introduction, but we will consider them in more detail [5, 6]:

The client can specifically indicate what data he needs and in what form.

This allows us to save the number of network calls, calls to the database, memory and file system, save traffic and get rid of unnecessary transformations, conversions and sorts.

Let's say there is a service that displays the user's top 25 photos in high quality, sorted by the number of likes and with several top comments. Then, on the profile page, we need to display a preview of the last five photos, sorted by date, so we add a new endpoint. Then we decided to create mobile versions for both screens, where we display less photos, do not display comments, and thumbnails are used instead of full-size images. This would require at least two modifications to backend code, which might be considered impractical due to lack of time. As a result, extra requests are made on the server side to get comments for images, and the user wastes time and traffic on downloading images in higher quality.

If we use GraphQL, in both cases developers of client application would have just to change their requests: the sorting method and the number of requested photos, remove comments from list of requested fields, and change link to the image to the link to the preview.

It simplifies the aggregation of data from multiple sources in a single query.

Let's say we have a service that provides information about accounts and a service that provides information about cards. To get information about the accounts and the cards linked to them, you have to either make two requests and compare their results on the client side, or create another service that aggregates the information and provides it in the form we need. When using GraphQL, one service called BFF (Backend For Frontend) is a generic aggregator.

The type system is used to describe the data.

A schema is a contract between a client and a server; it allows you to specify field types for requests and responses, lists of possible values (enum), and their mandatory presence (nullability).

Disadvantages of GraphQL

However, GraphQL also has disadvantages in comparison with REST [5, 7]:

Need to manage additional constraints.

Since consumers of the GraphQL API have ability to choose the data that he wants to receive, a security issue arises. For example, a malicious user can send a request to the server to obtain complete information about all users in order to use them for purposes that are contrary to the interests of the company. Or send a lot of resource-intensive requests in order to cause a denial of service. To prevent both attacks, developers need to set additional restrictions, anticipating possible ways of abuse. Also, some implementations have a Persistent Queries mechanism that allows you to set all possible queries and refer to them by a unique identifier.

The missing field is indistinguishable from null.

For example, there is a mutation request to update user information, allowing the username, address, and phone number to be changed. These fields may or may not be present in the request so that the customer does not have to send an address and phone number if they want to change their name. However, if the user wants to completely remove the address value by passing null, then the server will decide that the address field should not be changed.

The difference between the input and output format.

To illustrate, let's use one of the principles of REST – statelessness. For example, in one request, the client receives a certain context, which he must transfer in the next request. In the case of REST, the server and client exchange an identical object. And in the case of GraphQL, for this purpose, separate types for input and output must be defined in the schema, and the client must compose a request using the fields from the response.

Polymorphism is unsupported for mutations.

We can inherit one object from another or use union for several objects, but we cannot inherit input objects used in mutation. For example, we need to transfer information about the account holder. If the owner is an individual, then his last name, first name and patronymic are needed, and for a legal entity – the name of the company. In the case of REST, the client can pass an additional field containing the type of the account holder, and the server can deserialize to the desired type based on this field. And when using GraphQL, you have to create a separate query for each type.

Lack of namespaces.

Each GraphQL service has a single schema. In the case of a large project, the scheme can reach significant volumes, and orientation in it will require additional documentation, and the likelihood of name collisions increases. REST, in turn, does not use such concept as type of transferred objects, so these types are managed by clients and servers separately.

Limiting the use of the Backend Driven UI approach.

With this approach, the server side is in charge of controlling the user interface: the application is a collection of widgets. The list and order of widgets displayed on each screen, the contents of each widget, as well as the way to navigate between screens, are received by application from the server. When using GraphQL, the developer will have to decide how to transfer the changing query from the server to the device, or in response to each change, edit the schema by creating or modifying the existing query.

As you can see, both REST and GraphQL have their advantages and disadvantages, but the decision to use one or another approach should be made taking into account the specifics of a particular project.

GraphQL migration issues

In case developers decide to start using GraphQL in an existing product, they may face a number of problems [9]. Let's take an example to illustrate possible problems.

Let's say a company has mobile apps for Android and iOS platforms, as well as web versions of apps for computers and mobile devices. Some users are unable to update the application due to the fact that their version of the operating system is no longer supported by the application, but the company does not want to lose profit from these users.

The company periodically redesigns the application, so the format of data presentation on a large number of screens changes, in connection with which the formats of requests to the server and responses from it might also be changed. Due to the large number of available platforms, the workload on the server-side developers increases greatly, since it is necessary to develop services taking into account the differences in the presentation of the result on each platform.

Using GraphQL would reduce the burden on the backend developers, since in this case they just need to create a number of generic sources and provide a schema for which the developers of client applications will write queries.

However, the introduction of new technology means that it is necessary to teach every developer on each platform to use it, and then maintain two versions of the API simultaneously for a long time [8] – GraphQL for new versions of the application, and REST for old ones.

Proposed technology

As a solution to the listed problems, the author proposes creating an additional service as an adapter between REST clients and GraphQL servers. This service stores mappings (the correspondence between requests of two types), and when receiving a REST request, finds the corresponding GraphQL request template in its database, fills it with data from the REST request and sends it to the GraphQL server for execution, then returns the response to the client.

In addition to the described basic functionality, it is also possible to implement the following features:

If there is no match for the REST request, the request is passed to the gateway service – thus, the described service can become the gateway and the only access point to the system.

If necessary, casting the response of the GraphQL service to a different form can be implemented in order to maintain backward compatibility.

Advantages of the proposed technology

Let's consider the advantages of this approach in comparison with using REST or GraphQL:

- Flexibility and power of the GraphQL language – developers have the ability to write full-fledged GraphQL queries and develop the back end in accordance with all the principles of GraphQL.
- Backward compatibility on the client – the old version of the application can continue to function after the full transition to using GraphQL on the server.
- Developers of client applications do not need to learn new technology and implement it – interaction with the server is still carried out through the usual REST.
- Responsibilities for writing, debugging and editing queries can also be assumed by analysts and support staff, without requiring the participation of developers.
- Possibility of gradual migration – requests that were not implemented in GraphQL are passed to the old services, and then can implicitly replaced by the new implementation.
- Such service can access many different GraphQL services, allowing you to delineate areas of responsibility and solve the naming problem.
- It is possible to use existing caching mechanisms on the client and intermediate nodes, not suitable for use with GraphQL.
- A similar system can be implemented for any protocol of communication with the client – for example, instead of REST, the SOAP protocol can be used.
- To add and change the mapping, it is not necessary to reload the service, which allows you to make and check changes much faster than when you would have changed the code. Mappings can be updated periodically, upon detection of changes or by another event.
- The ability to edit a query on the server in real time, which is impossible when using the Persistent Queries mechanism, in which the client uses the hash code of one of the predefined immutable queries.

– Settings can be taken from any type of source – git or other version control system, database, config servers, local yaml files, etc.

– Storing mappings in the version control system will allow you to use an existing role model, including streamlined processes for reviewing changes, as well as protect mappings from unauthorized changes and loss, and use versioning.

– The response format can be easily manipulated using JSON formatting technologies such as the JOLT library [10].

– If you migrate from this solution to using GraphQL without intermediaries, developers will have tested GraphQL queries ready to be used. And to support old versions of the application after migration, you will not have to support the old REST cluster, but only this service.

– Reduces the amount of code responsible for data representation in services. This introduces a new level of abstraction that allows developers to write cleaner code.

– This service as a separate layer can be tested independently of the rest of the system using autotests: for this, "stubs" can be used, called instead of real services on the testing environment.

Disadvantages of the proposed technology

– An additional element in the call chain slows down the execution of requests.

– Service and mapping sources are new potential points of failure.

– If the source of mappings is unavailable, the service cannot be restarted – an additional source must be provided.

– With increasing number of mappings, the complexity of system support can significantly increase.

– We need a new mechanism for testing changes. Those actions that were previously covered by unit tests in services can now only be tested using autotests and stub services.

As you can see, the number and significance of expected advantages significantly exceeds the number and significance of expected disadvantages, and therefore the author consider it expedient to develop such a system.

Description of proposed service

The implementation of the proposed system should have the following functionality:

– Load mappings from the source, which is the git repository, the link to which is specified in the settings.

– Accept REST requests for GET, POST, PUT and DELETE methods.

– Find the corresponding mapping for the request by the request method and request URI. The request URI specified in the mapping can have a path variable, that is, for the request `GET /api/users/123/accounts?currency=RUR` the following mapping should be found: `GET /api/users/${userId}/accounts`

– Use path variables, query params and request headers as variables to form a request according to the template specified in the mapping. So, in the previous example, based on the request, the values of two variables will be set: `userId=123 and currency=RUR`.

– Also use body to get variable values. For example, when receiving a request with the following body

```
{"name": "Aleksandrov", "address": {"street": "Lubyanka", "house": "1"}
```

the values of the variables will be obtained `name=Alexandrov; address/street=Lubyanka; address/house=1`

– Substitute variable values into the query template stored in the mapping, in place of placeholders with the corresponding name. For example, the following request from the mapping:

```
{users (id: "${userId}") {accounts (currency_eq: "${currency}") {number}}
```

should be filled in like this:

```
{users (id: "123") {accounts (currency_eq: "RUR") {number}}
```

– If the mapping was not found, the request must be sent unmodified (with the URI, query params, headers and request body preserved) to the API Gateway address specified in the settings.

– Transformation of the received response is carried out if there is a transformation rule in the mapping. The transformation uses the technology specified in the mapping. The transformation rules are specified in the format corresponding to the specified technology. Supported technologies are selected by the developer.

A diagram illustrating the interaction between the client and the described service is shown in Figure 1.

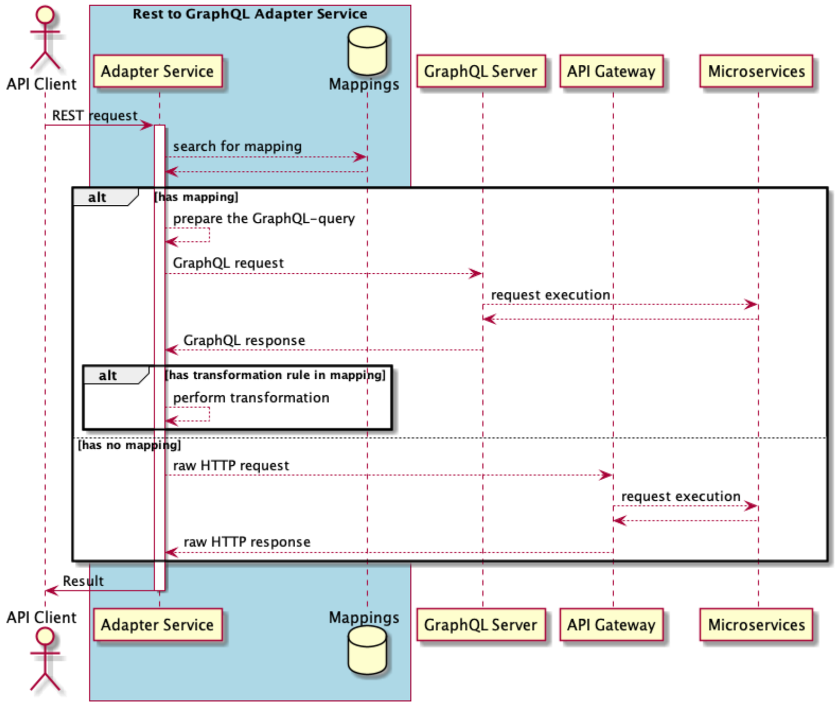

Figure 1 – sequence diagram

Conclusion

In this article we explored REST and GraphQL, their advantages and disadvantages, compared them to each other and modeled a process of migration from REST to GraphQL. Based on this data we described a service that would superpose both approaches, not only combining most of their advantages, but also having additional benefits.

The description can be treated as a specification for implementation of such service.

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QR – Issue QR – Article

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SLAVISM AND ITS SCIENTIFIC INTERPRETATION

Abstract: *This article is devoted to the presentation of the main theoretical views on the problem of identifying book elements in the history of the Russian literary language. This problem involves clarifying the content of such a concept as "Slavism" and clarifying it for the pre-national era, on the one hand, and for the national period, on the other.*

Key words: *history of the Russian language, book language, Slavism, literary language, Church Slavism, the second South Slavic influence.*

Language: *Russian*

Citation: Popov, D. V. (2021). Slavism and its scientific interpretation. *ISJ Theoretical & Applied Science, 01 (93)*, 186-190.

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Scopus ASCC: *1202.*

СЛАВЯНИЗМ И ЕГО НАУЧНАЯ ИНТЕРПРЕТАЦИЯ

Аннотация: *Данная статья посвящена изложению основных теоретических взглядов на проблему отождествления книжных элементов в истории русского литературного языка. Данная проблема предполагает выяснение содержания такого понятия, как «славянизм» и уточнения его для донациональной эпохи, с одной стороны, и для национального периода, с другой.*

Ключевые слова: *история русского языка, книжный язык, славянизм, литературный язык, церковнославянизм, второе южнославянское влияние.*

Введение

UDK 811.161.1

Как нам известно, в научной традиции термин «славянизм» обычно используется начиная со второй половины XVIII века. Одним из первых, кто специально обратился к анализу славянизмов, был А.А. Шахматов. Он проанализировал указанные элементы в современном ему русском литературном языке (рубежа XIX – XX веков). Справедливости ради нужно отметить, что исследователь использовал термины «церковнославянизм» и «церковно-славянский элемент». К церковнославянизмам А.А. Шахматов относил слова и отдельные форманты, исторически свойственные старославянскому языку или церковно-славянскому языку русской редакции. Он выделял следующие группы:

1. Фонетические:

а) сочетания ***РА***, ***РѢ***, ***ЛА***, ***ЛѢ*** (/ ***ОРО***, ***ЕРЕ***, ***ОЛО***, (***ЕЛЕ***)) на месте о.с. *or, *ol и т.д., церковно-славянскими им признаются и поздние сложения, в которых есть указанные фонетические элементы;

б) начальные сочетания ***РА***, ***ЛА***;

в) группа согласных ***ЖД*** на месте ***Ж***, о которой говорится как о результате «второго южнославянского влияния», причем оговаривается, что слова с *Ж* также могут быть признаны церковно-славянскими, поскольку они отражены уже в ранних церковно-славянских памятниках русской редакции;

г) аффриката ***Щ*** в соответствии с ***ч*** на месте о.с. *tj или *kt п/д гласными переднего ряда: ***ПОМОЩЬ***, ***ПЕЩЕРА***, ***ОВОЩ***, ***ВОЗВРАЩАТЬ***,

КЛЕВЕЩУ;

д) гласная *Е*, не перешедшая в *О* известных условиях. Здесь А.А. Шахматов выделяет две группы слов: с *Е* перед исконно твердой согласной (***НЕБО***, ***ПЕЩЕРА***, ***ПРЕДМЕТ***, ***ПЕРСТ*** и т.д.), с *Е* перед отвердевшей согласной, у этой последней выделяет еще две подгруппы: слова с согласной, отвердевшей в результате ассимилирующего воздействия последующей согласной (***БЕЗДНА ИЗ БЕЗДЬНА***, ***ДУШЕВНЫЙ ИЗ ДУШЕВЪНЫЙ***), слова с согласной, отвердевшей в поздний период (***ПАДЕЖ*** (но ***ПАДЁЖ***), ***МЯТЕЖ***);

е) начальное *Ю* в соответствии с русским *У*;

ж) наличие в словах твердого ***з*** на месте о.с. мягкого (***ОВЦА***, ***ПОЛЬЗА*** (но рус. ***НЕЛЬЗЯ***), ***НЕПРИТЯЗАТЕЛЬНЫЙ***);

з) новые гласные *О*, *Е* на месте слабых ***Ъ***, ***Ь*** в ***а***) словах, содержащих предлоги ***СО***, ***ВО***, ***ВОЗ***; б) слова, содержащие ***О***, ***Е*** в суффиксах; в) слова с ***о***, ***е*** в корнях. А.А. Шахматов объясняет церковно-славянский характер этого явления тем, что в старославянском языке прояснение редуцированных произошло раньше, чем в русском языке; ориентация на церковно-славянское произношение обусловила замену всяких ***Ъ*** и ***Ь*** гласными ***О*** и ***Е*** (***ВЕСА***, ***ВЕСЕЛЕНОУЮ***, ***НЕПЛОДОВЕ***). Поэтому к церковнославянизмам исследователь относит слова, содержащие названные префиксы: ***СОБОР***, ***СОВЕРШАТЬ***, ***СОВЛАДАТЬ***, ***СОТРАПЕЗНИК***, ***ВОВЛЕКАТЬ***, ***ВОПРОС***, ***ВОЗБРАНЯТЬ***, ***ВОСКЛИЦАТЬ*** и др., многие из них включают и другие церковно-славянские элементы; лексемы с суффиксом ***(-Е)СТВО*** (из ***-ЬСТВО***): ***РОЖДЕСТВО***, ***МНОЖЕСТВО***, ***ЧЕЛОВЕЧЕСТВО*** (после шипящих);

и) гласные ***ы***, ***И*** на месте напряженных редуцированных и в безударной и в ударной позиции. Произношение ***-ЫЙ***, ***-ИЙ*** признается первичным по отношению к ***-ЪЙ***. Сохранение *И* на месте ***ĭ*** в безударной позиции на письме и в произношении также признается церковно-славянской чертой: ***ПЕНИЕ***, ***ВОСКРЕСЕНИЕ***, ***НОЩИЮ*** и др.

2. Морфологические элементы:

а) окончание прилагательных в Р. п. ед.ч. ***-АГО***;

б) внеродовое окончание И.-В. п. мн. ч. ***-ЫЯ***, ***-ИЯ***.

3. Словообразовательные элементы:

Суффиксы: ***-ТЕЛЪ***: ***ПРЕДАТЕЛЬ***, ***ХРАНИТЕЛЬ***, ***УЧИТЕЛЬ*** и соответственно образования на ***-ТЕЛЬНЫЙ***; ***-СТВИЕ***; суффикс ***-СТВО*** в словах, имеющих ударение на корне, данные слова признаны частично церковно-славянскими (ср. фонетическую черту ***Е*** на месте ***Ъ*** в данном суффиксе), ***-ЕНСТВО*** (вм. ***-ЁНСТВО***), образования с ***-ЕС***: *ТЕЛЕСНЫЙ* и др.;

-ЕНИЕ, ***-АНИЕ***, суффиксы действительных причастий настоящего времени и страдательных причастий настоящего и прошедшего времени.

4. Церковно-славянская лексика:

В данной группе выделяются слова, имеющие «внешние» показатели: глаголы с ***ЖД*** и ***Щ*** (***ПРИНУЖДАТЬ***, ***ЗАПРЕЩАТЬ***), с чередованием заднеязычный/свистящий (***МОЗИ***, ***ОТРИЦАТЬ***); инфинитивы с ударным ***А*** в суффиксе в отличие от русских с ударным корневым гласным (***ПРАШАТИ***, но ***ПРÁШАТИ***, также ***УПРАШИВАТЬ***) и под., а также слова, «самое значение которых и культурная история доказывает тоже их церковно-славянское происхождение», среди последних заимствования из германского и греческого (***КАДИТЬ***, ***ОБРАЗ***, ***ЦЕРКОВЬ***, ***БУКВА***, ***МОНАСТЫРЬ***, ***АРХИЕРЕЙ***, ***ГРАМОТА***, ***ПОП***, ***ДИАКОН*** и под.) [18, с. 70-90].

Нетрудно заметить противоречивость шахматовской классификации славянизмов. Исследователь отождествляет отдельные форманты и словоформы, в состав которых входят данные форманты. К лексическим церковнославянизмам по существу отнесены слова, содержащие фонетические черты, которые А.А. Шахматов упоминает раньше.

Как видно, перед исследователем не стояла задача показать историческую динамику славянизмов. Как представляется, огромная работа по выявлению и классификации славянизмов была проделана им для иллюстрации «церковно-славянского происхождения» русского литературного языка. Поэтому к «церковнославянизмам» он относил и так называемые «южнославянизмы», или болгаризмы (в том числе те, которые появились в результате «второго южнославянского влияния»), и элементы, в определенное время характеризовавшие как церковно-славянский, так и русский язык. Подобная характеристика церковно-славянских элементов была предложена Л.А. Булаховским [1].

Позднее Г.О. Винокур обратил внимание на то, что «понятие «славянизм» может иметь два разных значения: одно – генетическое, другое – стилистическое» [3, с. 9]. Проанализировав значительную часть материала, предложенного раньше А.А. Шахматовым (анализируются три категории славянизмов: слова с неполногласием, с ***щ***, ***жд*** в соответствии с русскими ***ч***, ***ж***, с ***е*** в соответствии с русским ***о(ё)***.), он наметил три пути развития славянизмов в русском литературном языке и соответственно выделил три группы словоформ: 1) славянизмы, со временем вытеснившие русский эквивалент (***ХРАБРЫЙ*** – ***ХОРОБРЫЙ***); 2) славянизмы, разошедшиеся по значению со своим русским эквивалентом (***СТРАНА*** – ***СТОРОНА***); 3) славянизмы, употребление которых в русском литературном языке оказалось особым образом, стилистически, мотивировано (***ГРАД*** – ***ГОРОД***, ***ВЛАС*** – ***ВОЛОС***) [3, с. 10-11]. Надо сказать, что большая часть таких слов в литературном языке начала XX века уже не употреблялась. Таким образом, только последняя, очень незначительная группа слов, по наблюдениям Г.О. Винокура, представляет собой славянизмы в стилистическом значении.

Следует также обратить внимание на ряд важных, на наш взгляд, моментов, обозначенных в указанной статье Г.О. Винокура. Ученый выявил общую тенденцию изменения славянизмов в литературном языке и определил условия закрепления за ними функционального (стилистического) статуса: «Все то, что в каждую данную эпоху для говорящих и пишущих есть специальная принадлежность церковно-славянского языка своего времени и в этом качестве способно функционировать как наделенный определенными стилистическими свойствами церковно-славянский вариант общеупотребительного средства русской речи, и есть славянизм в стилистическом смысле слова» [3, с. 12]. Ср. также подобное его высказывание в другой работе о том, что со временем «практически утрачивалось всякое различие между такими фактами книжной речи, которые по происхождению восходили к старославянскому вкладу в русский язык, как, например, град, нощь, и превратившимися в факты книжной речи древнерусскими словами или формами, вышедшими из живого употребления, в котором они некогда свободно обращались, вроде руцѣ, ногама и т.п. Факты речи и того и другого рода представляли собой стилистически полное тождество, все это были факты языка ученого, церковного, отчетливо противостоящие фактам повседневного живого языка» [2, с. 90].

Сказанное означает, во-первых, что категория славянизмов исторически изменчива и может пополняться за счет элементов, «которые по своему происхождению вовсе не принадлежат к числу исключительных особенностей именно церковно-славянского языка и свойственны не в меньшей мере определенным стадиям развития самой русской речи» [2, с. 11]. Во- вторых, кроме лексических славянизмов (в том числе имеющих определенные маркирующие элементы) к данной категории относится и значительное количество грамматических славянизмов. К последним Г.О. Винокур относит архаичные окончания склонения и спряжения, «долгое время употреблявшиеся в русском письменном языке на правах стилистических славянизмов и в послепетровское время постепенно вышедшие из литературного употребления, вроде руцѣ <...>, форм аориста и имперфекта, форм причастий, вроде создавый (т.е. создавший), и многие другие» [2, с. 19].

Определяя функциональность славянизмов в рамках исторической стилистики, исследователь считал, что сосуществование славянских и русских элементов в языке независимо от исторической эпохи свидетельствовало о стилистической функции первых [2, с. 10].

Впоследствии появляется ряд работ, посвященных анализу отношений славянских и русских элементов в текстах, относящихся к различным историческим периодам [17; 6; 11; 15; 13; 7; 4; 5; 14; 9; 12; 10; 19; 21 и др.].

Как видно, «бум» исследовательского интереса к славянизмам приходится на 60-е – 70-е гг. XX века. Все эти работы объединяет обращение к корпусу славянизмов, в свое время выделенных А.А. Шахматовым.

Так, О.Г. Порохова, исследуя Сибирские летописи XVII в., анализирует неполногласную и полногласную лексику, парные лексемы с ***ЖД*** и ***Ж***, слова с ***Щ*** и ***ч***, а также причастия. Исследовательница использует термин «старославянская (и соответственно русская) по происхождению лексика». За исключением случаев семантической дифференциации парных лексем, подтвержденной материалом памятников, анализ прочих «старославянских по происхождению» слов соответствует традиционному в то время взгляду на славянизмы как на принадлежность исключительно исторической стилистики. Стилистически разграниченные парные лексемы О.Г. Порохова называет «вариантами», причем стилистическая разграниченность определяется непосредственным лексическим окружением (ср. ***ДРЕВИЕ ВЕЛИЕ*** и ***ДЕРЕВИЕ РАЗЛИЧНОЕ***) или употреблением «в контексте высокого стиля» [11, с. 118; 125-126]. Судя по всему, автор отождествляет стилистическое и жанровое разграничение соответствующих лексем. Ср.: «Употребление некоторых слов в Сибирских летописях только в неполногласной форме объясняется не причинами узкого контекста, часто граничащего с устойчивой книжной фразеологией, а традицией употребления слова в книжных жанрах письменности» [11, с. 126]. Несколько выше она как будто разграничивает эти понятия [11, с. 121]. Семантически и стилистически равноправные лексемы О.Г. Порохова называет «дублетами». И поскольку «равноправность» определяется по отсутствию контекстных условий для разграничения, «дублетными» оказываются и такие лексемы, которые в других контекстных условиях ведут себя как «стилистические варианты». Наличие старославянских и русских дублетов автор объясняет «общими стилистическими тенденциями письменного языка эпохи XVII в.»: «Древнее жанровое разграничение употребления старославянского и русского языков, явившееся причиной соответствующего жанрового разделения, с течением времени стало ощущаться как разграничение не столь жанровое, сколь стилистическое. Так постепенно жанровое разделение в использовании старославянского и русского языков сменяется стилистической дифференциацией русских и старославянских элементов в русском письменном языке. Этот процесс, протекающий на протяжении длительного времени, в XVII в. находился на той стадии, когда старые нормы в письменности уже нарушились, а новые стилистические нормы русского национального языка еще не установились» [11, с. 121].

Анализу славянизмов в стилистическом аспекте на материале литературных произведений XVIII века посвящена работа В.В. Замковой. Исследовательница называет в качестве источника славянизмов «старый книжный язык на церковно-славянской основе» [5, с. 5] и указывает, что контакты русского и церковно-славянского языков к середине XVIII столетия «касались главным образом лексического состава и словообразовательных возможностей, грамматический же строй русского литературного языка <. ..> уже окончательно сформировался» [5, с. 5]. В.В. Замкова рассматривает славянизм как стилистическую категорию, под которой подразумевается «совокупность стилистических единиц, определяющих какой-либо стиль. Фактором, объединяющим стилистические средства в одну стилистическую категорию, является <...> общность функций» [5, с. 16]. В качестве материала исследовательница берет произведения, принадлежащие, согласно ломоносовской теории, «высокому» и «среднему» стилям. Свои наблюдения она сравнивает с данными Словаря Академии Российской (пер. изд. 1789-1794 гг.) и некоторых других лексикографических источников [5, с. 17-18]. В центре внимания – лексика, восходящая к церковно-славянскому языку, которую В.В. Замкова разделяет на группы в зависимости от частеречной принадлежности, а также слова, имеющие «внешние» маркеры славянского или неславянского происхождения. Критерием стилистической дифференциации церковно-славянских и русских по происхождению слов для В.В. Замковой служит употребление данных лексем в произведениях соответствующих стилей. Для исследователей языка более ранних эпох таким критерием может являться соответствующее лексическое окружение, поскольку о «высоком», «среднем» или «низком» стиле речи еще идти не может.

Проблему разграничения функциональных и «уже нейтральных» элементов церковно-славянской традиции в современном литературном языке можно считать «снятой», поскольку немногие стилистически маркированные лексические славянизмы являются достоянием исключительно поэтической речи.

Е.С. Копорская определяет «славянизмы» как «слова или устойчивые словосочетания, вошедшие в русский язык из старославянского языка или из его более позднего (с 11 в.) русского извода - церковно-славянского языка» [8, с. 487]. Соответственно славянизмы разделяются на «старославянизмы» и «церковнославянизмы», к ним относятся слова с известными фонетическими и словообразовательными признаками. Таким образом, основополагающими при выделении подобных слов выступают генетические характеристики. Между тем, Е.С. Копорская называет особую лексико-стилистическую категорию слов, квалифицируемых как «высокие» и «поэтичные», такие как ***АГНЕЦ, АЛКАТЬ, БРЕМЯ, ВОПИЯТЬ, ВРАТА, ГЛАС, ГРЯСТИ, ЛИК, СТЕЗЯ, ШЕСТВОВАТЬ*** [8, с. 489].

Книжными элементами для донациональной эпохи считаем единицы, отождествляемые носителями языка с единицами церковно-славянского языка своего времени. В этом значении книжные элементы тождественны понятиям «церковно-славянский элемент» и «славянизм». В национальную эпоху объем понятия «книжные элементы» расширяется: в числе прочих единиц к книжным элементам теперь относятся славянизмы и канцеляризмы, в том числе восходящие к церковно-славянской традиции [20, с. 406].

Итак, в определении понятия «славянизм» остановимся на позиции Г.О. Винокура, который раскрыл сущность славянизма как функциональной единицы [3, с. 1947]. Мысль, извлекаемая из его дефиниции, состоит в том, что славянизмом закономерно считать любой элемент (слово, морфологическую форму или даже синтаксическую единицу), если таковой со-относим в определенный исторический период носителями языка с церковно-славянским языком этого времени.

Термин «славянизм» в его функционально-стилистическом понимании следует конкретизировать для языка древних эпох до XVIII века и для XVIII столетия. Полагаем, что в донациональную эпоху то, что понимается под славянизмами, абсолютно тождественно понятию «книжный элемент». В период формирования национального языка в число книжных входят элементы различного происхождения. Славянизм в этот период – одна из составляющих нового книжного языка.

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